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By CHARLES ANSELL, Esq., F.R.S.

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## P R E F A C E.

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THE parts of the following small work which the author considers to deserve most attention, are, 1st, those which relate to *the actual experience of a large number of Friendly Societies* as to the quantity of sickness, as well as the rate of mortality, among the members—now for the first time published, as regards such Societies in *England*; and 2d, *the mode of applying that experience* in determining the requisite contributions to provide for an allowance in sickness: to these objects the Author has directed the chief part of his attention. He is not aware that he has been preceded in the publication of any accredited data as respects the sickness experience among Friendly Societies in *England*; or in the application of the doctrine of interest and probability to that part of the subject: and since there are few who act as pioneers on such occasions but leave much room for improvement, he is quite prepared to learn that his work is defective and capable of amendment. If it be objected by any that some of the theorems might have been extended to cases which he has not introduced, he can only say he has, throughout, been actuated by a desire to render the Treatise short; and that it was found, in almost every instance, more difficult to compress than it would have been to dilate.

Care has been taken to introduce nothing but what may be very easily understood by persons acquainted with the most simple principles of algebra; and from this cause, some of the demonstrations may, by the experienced mathematician, be objected to as unnecessarily prolix. The notation adopted was fixed on for the particular purpose to which it is applied: because it generally keeps in view the several elements which enter into the demonstrations or theorems; and, notwithstanding it may sometimes appear cumbrous to the eye, it will probably be less diffi-

cult for the mind to retain, than one which may be shorter in its written expression.

As it is not intended that the work should be confined to the reading of those only who have made some progress in a knowledge of algebra, it has been deemed proper to give rules, in words at length, by which all the arithmetical operations, required in computing tables for the use of Friendly Societies, can be performed without any reference whatever to algebraical formulæ.

Most of the values and tables introduced are expressed in decimal fractions, and since the work may be consulted by some persons not very familiar with that mode of expression, it is thought well to print the rule and tables given in this and the three following pages; the application of which rule and tables will, it is hoped, be sufficiently plain to obviate any difficulty that might, without them, arise in making use of the several tables inserted in the body of the work.

| *Rule for converting Decimal Fractions of £1 into Equivalent Values, expressed in Shillings, Pence, and Farthings.*

1st. Multiply the decimal fraction by 20, and in the product separate by a comma as many figures on the right hand as there were figures in the decimal fraction: the figure to the left hand of the comma will be the number of complete *shillings* in the fraction. 2nd. Then multiply those figures remaining to the right hand of the comma by 12, and, as before, separate, by a comma, from the second product as many figures on the right hand of *this second comma* as were contained in the original fraction: the figures to the left hand of this second comma will be the number of complete *pence* in the fraction. 3rd. Again multiply the figures to the right of the comma, in this second product, by 4; and separate as many places of figures from the right hand of this third product as the original fraction contained: the figure to the left of this last comma will be the number of complete *farthings* in the fraction. 4th. If the first figure on the right hand of the last comma be 5 or more, an additional farthing should be added to the sum obtained by the foregoing operation.



EXAMPLE.—What is the value, in money, of the decimal fraction  $\cdot 7623$ ?

$$\begin{array}{r}
 \cdot 7623 \\
 \underline{20} \\
 15,2460 = 15 \text{ shillings.} \\
 \underline{12} \\
 2,9520 = 2 \text{ pence.} \\
 \underline{4} \\
 3,8080 = 3 \text{ farthings.}
 \end{array}$$

And as 8, the first figure to the right hand of the last comma, is more than 5, one farthing must be added to the money-value found, and the total money-value sought will be as under.—

$$\begin{array}{r}
 15s. 2\frac{1}{2}d. \text{ as shown in the above operation.} \\
 \text{To which add } \dots \quad \frac{1}{4} \\
 \hline
 \text{Making the total} \quad 15 \quad 3
 \end{array}$$

As a result of multiplying any decimal fraction of a pound sterling by 20—there will always, consistently with the foregoing rule, be twice as many shillings produced in the money-value as there are units in the first decimal figure; and an additional shilling will be contained in the fraction, if the second figure thereof amount to 5: so that we can, from inspection, immediately see the exact number of *complete shillings* contained in any decimal fraction presented to us. Thus, the decimal fraction  $\cdot 7000$ , we should at once know to be fourteen shillings; because  $\cdot 7000 \times 20 = 14,000$ , or fourteen shillings, by the preceding rule. Again,  $\cdot 7500 \times 20 = 15,000$ , or fifteen shillings. This is, in the first case, the same as doubling, for the shillings, the first figure of the fraction; and in the latter instance, it is the same as doubling the first figure and adding 1, because the second figure amounts to 5. If there be any remainder over the 5 in the second figure, or if the second figure fall short of 5, the Table A, on the next page, will show the money-value, to the nearest farthing, of that part of the fraction which may remain above

the complete shillings it contains ; such remainder will of course be the *pence and farthings* contained in the fraction. If, for instance, the fraction had been  $\cdot 7623$ , as in the example given to illustrate the ordinary rule, there would then, after deducting the complete shillings, or  $\cdot 7500$ , have remained  $\cdot 0123^*$ , which, by the following Table *A*, is shown to be equal to  $3d.$ , because it falls between the decimals  $\cdot 0120$  and  $\cdot 0130$  : therefore the total value of the fraction  $\cdot 7623$  is equal to  $15s. 3d.$  ; which agrees with the result obtained by the rule first given.

Table *A*.

If the decimal fraction amount to	and be not more than	the nearest value in pence and farthings will be	If the decimal fraction amount to	and be not more than	the nearest value in pence and farthings will be
		<i>d.</i>			<i>d.</i>
$\cdot 0000$	$\cdot 0005$	0	$\cdot 0256$	$\cdot 0265$	$6\frac{1}{2}$
$\cdot 0006$	$\cdot 0015$	$\frac{1}{4}$	$\cdot 0266$	$\cdot 0276$	$6\frac{1}{2}$
$\cdot 0016$	$\cdot 0026$	$\frac{1}{2}$	$\cdot 0277$	$\cdot 0286$	$6\frac{1}{2}$
$\cdot 0027$	$\cdot 0036$	$\frac{3}{4}$	$\cdot 0287$	$\cdot 0296$	7
$\cdot 0037$	$\cdot 0046$	1	$\cdot 0297$	$\cdot 0307$	$7\frac{1}{4}$
$\cdot 0047$	$\cdot 0057$	$1\frac{1}{4}$	$\cdot 0308$	$\cdot 0317$	$7\frac{1}{4}$
$\cdot 0058$	$\cdot 0067$	$1\frac{1}{2}$	$\cdot 0318$	$\cdot 0328$	$7\frac{1}{2}$
$\cdot 0068$	$\cdot 0078$	$1\frac{3}{4}$	$\cdot 0329$	$\cdot 0338$	8
$\cdot 0079$	$\cdot 0088$	2	$\cdot 0339$	$\cdot 0348$	$8\frac{1}{4}$
$\cdot 0089$	$\cdot 0098$	$2\frac{1}{4}$	$\cdot 0349$	$\cdot 0359$	$8\frac{1}{4}$
$\cdot 0099$	$\cdot 0109$	$2\frac{1}{2}$	$\cdot 0360$	$\cdot 0369$	$8\frac{1}{2}$
$\cdot 0110$	$\cdot 0119$	$2\frac{3}{4}$	$\cdot 0370$	$\cdot 0380$	9
$\cdot 0120$	$\cdot 0130$	3	$\cdot 0381$	$\cdot 0390$	$9\frac{1}{4}$
$\cdot 0131$	$\cdot 0140$	$3\frac{1}{4}$	$\cdot 0391$	$\cdot 0400$	$9\frac{1}{4}$
$\cdot 0141$	$\cdot 0151$	$3\frac{1}{2}$	$\cdot 0401$	$\cdot 0411$	$9\frac{1}{2}$
$\cdot 0152$	$\cdot 0161$	$3\frac{3}{4}$	$\cdot 0412$	$\cdot 0421$	10
$\cdot 0162$	$\cdot 0171$	4	$\cdot 0422$	$\cdot 0432$	$10\frac{1}{4}$
$\cdot 0172$	$\cdot 0182$	$4\frac{1}{4}$	$\cdot 0433$	$\cdot 0442$	$10\frac{1}{4}$
$\cdot 0183$	$\cdot 0192$	$4\frac{1}{2}$	$\cdot 0443$	$\cdot 0453$	$10\frac{1}{2}$
$\cdot 0193$	$\cdot 0203$	$4\frac{3}{4}$	$\cdot 0454$	$\cdot 0463$	11
$\cdot 0204$	$\cdot 0213$	5	$\cdot 0464$	$\cdot 0473$	$11\frac{1}{4}$
$\cdot 0214$	$\cdot 0223$	$5\frac{1}{4}$	$\cdot 0474$	$\cdot 0484$	$11\frac{1}{4}$
$\cdot 0224$	$\cdot 0234$	$5\frac{1}{2}$	$\cdot 0485$	$\cdot 0494$	$11\frac{1}{2}$
$\cdot 0235$	$\cdot 0244$	$5\frac{3}{4}$	$\cdot 0495$	$\cdot 0500$	12
$\cdot 0245$	$\cdot 0255$	6			

When it is desired to find the value of a fraction, *to the nearest penny only*, the following Table *B* must be used, in the same manner as Table *A* was in the last example.

$$\begin{array}{r}
 * \quad \cdot 7623 \\
 \text{less} \quad \cdot 7500 \\
 \hline
 \text{is equal to} \quad \cdot 0123
 \end{array}$$

Table B.

If the decimal fraction amount to	and be not more than	the nearest value in pence will be	If the decimal fraction amount to	and be not more than	the nearest value in pence will be
·0000	·0020	d.	·0271	·0312	d.
·0021	·0062	0	·0313	·0354	7
·0063	·0104	1	·0355	·0395	8
·0105	·0145	2	·0396	·0437	9
·0146	·0187	3	·0438	·0479	10
·0188	·0229	4	·0480	·0500	11
·0230	·0270	5			12
		6			

In more than one Friendly Society recently established, certain assurances, called "endowments for children," have been introduced, which allow the members or others to secure, by small monthly or annual payments, certain sums for children, on their attaining given ages; and in some Societies the *same principle* has been extended to other cases of a like nature. The consideration of such transactions has been advisedly omitted in the following Treatise; not because it is supposed there is anything objectionable in their nature or their adoption, but for the reason, that the introducing them among the objects of a Friendly Society would unavoidably interfere with that simplicity which seems to be absolutely essential to its good management, if it be intended that the members of the institution should exercise any efficient control over its affairs. The societies alluded to, as having admitted the principle of endowments in their plans, have been established and conducted under the personal superintendence of a few zealous and intelligent individuals among the clergy and gentry, whose leisure has permitted them to dedicate a large share of their time to the business of the institutions to which they have respectively attached themselves: and so long as the leisure of these philanthropic persons shall allow them to continue their useful exertions, all will possibly be well; but should those societies be deprived of such valuable aid, it is not unlikely that their multifarious transactions will be found a serious evil, and the intricacy unavoidably caused thereby may throw all the influence and control over their management into the hands of a small number of members, probably to the great detriment of the interest of the

rest. If, however, it should be thought desirable at any time to embrace the assurance of endowments in the plans of a Friendly Society, and satisfactory data should be collected from which to determine the rate of mortality prevailing among the children of the labouring classes, the principles laid down in the following pages will be found of easy application to the purposes in question.

That the admission of varied objects into Societies is not necessary to their success, seems sufficiently evinced from the experience of the life assurance offices established in London. Every one of such establishments, *without exception*, which has become distinguished for the magnitude or success of its concerns, is marked by the extreme simplicity of its plan; while others, which embrace a vast number of objects and options, have also, *without exception*, remained comparatively unpatronised or resorted to by the public. The reason is abundantly plain;—men engaged in the ordinary business of life have little disposition to enter into the critical and laborious investigations which are requisite for the understanding of complex schemes in which life contingencies are involved; and they have as little anxiety to connect themselves with institutions of which they do not clearly comprehend the principles. It is not improbable that should Friendly Societies be hereafter formed, with plans as diverse as those of the different assurance-offices, experience may equally demonstrate the wisdom of a rigid adherence to simplicity in the former as in the latter cases.

The Author has been anxious to record the reasons which have influenced his judgment on this particular point; because he is aware that several estimable and zealous advocates for Friendly Societies differ with him in opinion thereon; and the Act of the 4th and 5th of William IV., c. 140, passed since this work was partly printed, having removed almost every restriction as to the objects which a Friendly Society may embrace in its arrangements, it becomes the more proper that caution should be urged against a Society admitting complexity into its plan.

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## TO THE BINDER.

Plate I. is to face page 64.  
 " 11. " " 70.





# ERRATA.

Page 38, line 1, after the word "mortality," add "at p. 69."

" 81, " 23, dele . at the beginning of the line.

" 82, foot note, for P<sub>1</sub> read P<sub>2</sub>.

" 96, line 23, for  $1 - \frac{16 \cdot 9248 \times \cdot 035}{1 \cdot 035}$  read  $\frac{1 - (16 \cdot 9248 \times \cdot 035)}{1 \cdot 035}$

" 97, " 3, for 393847, read · 393847.



## FRIENDLY SOCIETIES.

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### INTRODUCTORY REMARKS.

IN proportion as the human mind is cultivated and improved, are forethought and providence increased in it, as well as the range of their prospective application enlarged; and there is, probably, no more satisfactory evidence that knowledge is becoming largely diffused among the labouring classes in this country, than is to be found in the fact of the present widely extended and extending disposition they evince to make such provision, by their own honest efforts, through the medium of Friendly Societies, as will avert the misery which poverty adds to the bed of sickness, to the infirmities of age, and to the hour of death. It is with the intention of giving a safe and beneficial direction to a disposition so honourable and useful, that the following Treatise is prepared.

There are few institutions capable of being rendered more generally useful than Friendly Societies, provided they are founded on correct principles, and are conducted with prudence and economy. They are beneficial alike to the individuals of whom they are composed, and to the community at large. Whatever substantial advantage the members derive, from such societies, in the form of allowances during sickness and in other natural misfortunes, are greatly enhanced in value by the consciousness that such advantages are the fruits, not of benevolence or of the charity of others, but of the members' own frugality and providence. This feeling must be consoling in the highest degree, and must tend very much to soothe the mind in the severest afflictions, when, of all times, tranquillity is most desirable, and even necessary. Indeed, few things can be conceived more gratifying than the enjoyment of benefits we feel conscious are the result of our own well-doing.—It raises us in our own

estimation—it makes us feel that we are of some value in society—that we contribute to its welfare by our labour, without being burdens upon it in our misfortunes. Frugality and providence give to a man a moral independence, and a happiness of which a mere pauper can scarcely form an idea. But this is not all: so good a beginning can hardly fail to induce general good conduct and habits of carefulness; because the advantages of them will become almost self-evident. A man with such habits is a better husband, a better father, and a better servant; he is, therefore, more likely than others to be employed where confidence and trust are to be reposed; and his services will necessarily be of more value to others, and more productive to himself. He will be pleased at passing his hours of relaxation in the midst of his family; because he will know that he has done his duty to them, and, consequently, has a right to look for their approbation; and the instances will be rare in which he will not possess both their affection and their confidence.

All the foregoing appear to be natural and direct inferences; and the truth of them, in their fullest extent, will not be questioned by those who have had the most extensive experience on the subject of Friendly Societies: such persons could not hesitate to confirm that the members of Friendly Societies are generally the most intelligent, sober, steady, and trustworthy men of their class in their respective neighbourhoods.

It is scarcely necessary to insist on the benefit *the community* must derive from the labouring classes becoming sensible of their true interests, and depending for support in sickness and old age on the savings they may be enabled to make out of their earnings while in health and in their years of vigour; whether the same be appropriated as contributions to the funds of Friendly Societies, or deposited and accumulated at interest in Savings Banks.

One of the most obvious and immediate advantages that would result to the nation at large from the extensive establishment of safely-founded Friendly Societies, would be a sensible diminution in the poor rates. The first effect on such rates would necessarily be to relieve them from a portion of those claims which are now largely made on them by labouring individuals who may be visited with sickness; who, having no other resource, at such a time, are obliged to seek parochial aid for themselves as well as for their

families : another, not trivial, although certainly a more distant, effect would be produced by parishes being relieved from the support of all such old and infirm persons as should have become members of solvent Friendly Societies. The poor rates would also be relieved from a great part of those charges now incurred in every parish for the burial of the poor. These are direct benefits, and not insignificant ones. But it can scarcely be doubted, that the moral effect capable of being produced by the societies in question would be even more beneficial to the community than the direct pecuniary advantage through the poor rates: there is good reason to hope that the wide diffusion of such institutions might partially bring back that manly old English feeling, which formerly made the British peasant and artisan regard the receipt of parochial bounty as little short of a stain on his character; and degraded him in his own estimation, as well as in that of his neighbours. If such result should be produced, it would go far to destroy one of the most demoralizing evils of the times, and probably one of the most fruitful sources of crime, namely, the widely-spread system of pauperism which now unhappily exists.

It may be mentioned to the honour of almost all the Friendly Societies established in England, that, by their rules, any member who may be convicted of felony, is excluded the society to which he may belong, and the whole amount he may have contributed to its funds becomes forfeited. As there is no reason to believe that such a rule may hereafter cease to be as general as it now is, the community must, from this cause alone, be deeply interested in the success of institutions wherein men voluntarily make their dependence in sickness and in old age contingent on their *continuing, throughout their lives*, untainted by any serious offence against the laws of their country. From these considerations it seems obvious, that all due and prudent aid should be offered to men who may be disposed, by their frugality and providence, to benefit themselves as well as the political body of which they form a part.

Those who have taken much interest in Friendly Societies, and in the effects produced by them on the habits of the labouring classes, have had frequent reason to lament that unsound calculations, bad management, and fraud, have, with a deplorable frequency, caused such institutions to fail. The number of societies that have existed long enough to bring the sufficiency of their

contributions to the test of experience, bears a lamentably small proportion to the number that have become insolvent. In the early stages of such institutions the claims upon their funds are few. They have usually started with the great mass of their members in the prime of life, and in robust health; so that, for a while, nearly all their receipts have appeared to be profits: it is only when advancing age, increased sickness or permanent infirmity, together with accelerated claims for funeral money, press heavily on the funds, that it is discovered the original contributions have been inadequate to provide for the benefits promised to the members; and, when insolvency shews itself, the ruin produced by it to the elder members comes at a time when their vigour is for ever gone, and they are no longer capable of realizing by their labour the means of beginning anew to make that provision for their helpless age, which, to their credit, they had, for the best proportion of their lives, been honourably striving to effect. There is scarcely a village in England where may not be found many unfortunate instances of what is here asserted; and if, with so many discouraging facts continually presented to them, men still, as they do, evince a strong desire to form themselves into Friendly Societies, the disposition to so laudable a foresight must be unusually powerful, and surely well deserves the encouragement which the legislature now wisely extends to such societies, and also merits the best assistance that experience can offer, to direct them to the safe and proper attainment of their object.

That there are to be found among the working classes a large number of dishonourable exceptions to the foresight alluded to, is true: persons whose bad characters prevent their being employed in those labours which are the best remunerated, or whose wasteful and dissolute habits prevent their saving from month to month the means of making the most moderate contributions to the funds of Friendly Societies: but these exceptions would probably be reduced to an insignificant number, if the instances of old men living happily and in comfort, on an allowance from some well-founded Friendly Society, were as frequent as the existing instances are of disappointed trust placed in ill-founded and ill-managed institutions, that have very improperly borne the name of Friendly Societies; but which might often more appropriately be termed societies for the encouragement of intoxication.

The Society for the Diffusion of Useful Knowledge, under whose superintendence these observations are published, is desirous of aiding, as far as the present state of knowledge on the subject will allow it to do so, Friendly Societies in establishing themselves on such bases as may best promise to attain the object sought; and although the result of the following investigations should show that the contributions requisite to provide for particular benefits ought, in some cases, to be larger than what have been heretofore relied on; the society feel persuaded the good sense of that class of persons to whom this work is particularly addressed, will point out that the first object to be desired is *security*. In fact, if Friendly Societies were to be established without a well-grounded hope that the benefits promised would be obtained, evil and not good would be the result; since any such institutions would only serve to multiply cases of disappointment; to which the idle and wicked might plausibly point as so many living proofs, that forethought and frugality had not produced any ultimate good to those who had sacrificed some of the comforts of early life, however trifling, with the laudable hope of being recompensed in old age.

### HISTORY OF FRIENDLY SOCIETIES.

THE advantages of associations, similar in their nature to Friendly Societies, seem to have been appreciated at a very early period; and it is more than probable that associations which had for their object to provide for the necessities of the few, by the contributions of the many, were numerous long prior to the Norman Conquest, in the year 1066, although the want of learning and the great scarcity of authors at that period have prevented the existence of many such institutions being recorded.

Hicks, in his Thesaurus, mentions some societies of the nature alluded to, the rules of which, in the original Saxon, are still preserved. One was established at Cambridge among noblemen and gentlemen, and the following is a translation of its rules. These are in themselves curious, and they show how nearly in principle the institutions assimilated to the modern Friendly Society.

The rules are as follow:

"In this writing is contained an account of an institution

established by the members of the society (gilde) of noblemen in Cambridge.

"1. It is ordained, that all the members shall swear, by the Holy Reliques\*, that they will be faithful to each of their fellow members, as well in religious as in worldly matters, and that (*in all disputes*) they will always take part with him that has justice on his side.

"When any member shall die he shall be carried by the whole society to whatever place of interment he shall have chosen; and whoever shall not come to assist in bearing him shall forfeit a sextarium of honey; the society making up the rest of the expense, and furnishing each his quota towards the funeral entertainment; and also twopence for charitable purposes; out of which as much as is meet and convenient is to be bestowed upon the church of St. Etheldred.

"When any member shall stand in need of assistance from his fellow-members, notice thereof shall be given to the Reeve, or Warden †, who dwells the nearest to that member, unless that member be his immediate neighbour ‡: and the Warden, if he neglect giving him relief, shall forfeit one pound. In like manner, if the president of the society shall neglect coming to his assistance, he shall forfeit one pound §, unless he be detained either by the business of his lord or by sickness.

"If any one shall take away the life of a member, his reparatory fine shall not exceed eight pounds; but if he obstinately refuse to make reparation, then shall he be prosecuted || by and at the expense of the whole society; and if any individual undertake the prosecution, then each of the rest shall bear an equal share of the expenses. If, however, a member who is poor kill any one, and compensation must be made, then, if the deceased was worth 1200 shillings ¶, each member of the society shall con-

\* Probably of their tutelar saint. Every gild was denominated from some favorite saint or festival, as St. George's Gild, Trinity Gild, Holy Cross Gild, &c.

† Officers (it is supposed) of the society, subordinate to the president.

‡ Because in this case the Warden might be presumed to be acquainted (without notice) that violence was offered to his next neighbour.

§ An Anglo-Saxon pound contained as much silver as is now coined into about 3*l.* 1*s.* 11*d.* sterling.

|| These prosecutions, it is probable, were literally carried on by *force and arms*.

¶ A Saxon shilling differed little in value from the same coin in modern times;—it usually, although not always, contained four Saxon pennies.



tribute half a mark\*; but if the deceased was a hind, each member shall contribute two oræ†; if a Welchman, only one. If any member shall take away the life of another member, he shall make reparation to the relations of the deceased, and besides make atonement for his fellow-member by a fine of eight pounds, or lose his right of fellowship in the society. And if any member, except only in the presence of the king, or a bishop, or an alderman, shall eat or drink with him who has taken away the life of his fellow-member, he shall forfeit one pound, unless he can prove, by the evidence of two witnesses upon oath, that he did not know the person.

“If any member shall treat another member in an abusive manner, or *call him names*‡, he shall forfeit a quart of honey; and if he be abusive to any other person who is not a member, he shall likewise forfeit a quart of honey§, unless he can clear himself by the evidence of two witnesses upon oath.

“If any knight (*that is, a servant at arms*) shall draw his sword, his lord shall forfeit one pound, which he may, by every possible means, recover from the offender, and which the whole society shall assist him in the recovery of. And if one knight shall wound another, the wounded person's lord, in concert with the whole society, shall avenge the wrong, and prosecute the offender to death.

“A knight for waylaying a man shall forfeit a sextarium of honey; and if he set any trap or snare for him, the penalty shall be the same.

“If any member, being at a distance from home, shall die, or

\* A mark was two-thirds of a Saxon pound, and equal in weight of silver to about 2*l.* 1*s.* 3*d.* of our present silver coinage.

† An oræ was the eighth part of a mark, and nearly equal in weight to about 5*s.* 2*d.* of our present silver coinage.

‡ So in the Weavers' Company at Newcastle, a member was fined 6*s.* 8*d.* for calling a brother “Scot,” or “Mansworn.”

§ Honey was an article that would keep, and therefore very proper for a fine: it was probably used for meelheglin, or in some other way for the feasts of the society. In one of the fraternities at Newcastle, it was ordered that the corpse of every brother who during his lifetime had paid his month-pence should be preceded to church, at his burial, by the common lights of the society: funeral honours were in like manner paid to members' wives. The wax and oil which were given by new members on their admission were, no doubt, for the use of the society in these and other processions.

fall sick, his fellow-members shall send to fetch him, either alive or dead, to whatever place he may have wished, or be liable to the stated penalty; but if a member shall die at home, every member who shall not go to fetch his corpse, and every member who shall absent himself from his obsequies, shall forfeit a sextarium of honey."

The rules of another society, noticed by Hicks, are as follow :

"This meeting is held in the city of Exeter, for the sake of God and our own souls, that we may make such ordinances as tend to our welfare and security, as well in this life as in that future state we wish to enjoy in the presence of God our Judge. Being therefore here assembled together, we have decreed—

"That three stated meetings shall be held every year,—the first on the festival of St. Michael the Archangel; the second on the festival of St. Mary next following the winter solstice; and the third on the festival of All Saints, which is celebrated after Easter.

"That at each meeting every member shall contribute two sextaria of barley-meal \*, and every knight one, together with his quota of honey.

"That at each of these meetings a priest shall sing two masses—the one for the living, the other for the departed members; every lay-brother shall likewise sing two psalms—the one for the living, and the other for departed members. Every one shall, moreover, in his turn, procure six masses and six psalms to be sung at his own proper expense.

"That when any member is about to go abroad, each of his fellow-members shall contribute five pence; and if any member's house should have been burnt, one penny †.

"That if any one should neglect the stated times of meeting, for the first neglect he shall be at the expense of three masses; for the second, of five; and if, after being warned of the consequence, he shall absent himself a third time, he shall not be excused, unless he has been hindered, either by sickness, or by the business of his lord.

"That if any one should by chance neglect the stated time of meeting, his quota of regular contribution should be doubled.

\* *Wheat* (i. e. of meal) Hicks translates by his Latin word *potenta*.

† The Saxon penny was the 20th part of an *ora*, or about 3d. of our present money.

"That if any member shall treat another member in an abusive manner, his reparatory fine shall be thirty pence.

"And finally we beseech every member, for God's sake, to observe those things which are ordained in this society in everything as we have ordained them. And may God help us to observe them!"

From these curious deeds it would appear that gilds were originally instituted by the mutual agreement of friends and neighbours, and had no further object than the relief of the brethren in times of distress, and perhaps the protection of the associated members against the lawless attacks of powerful neighbours. Some pious offices were however the never-failing concomitants of these institutions. After the Conquest, gilds were established for the express promotion of religion, charity, or trade; and it is from these fraternities, simple as they originally have been, that the various companies and city corporations in this kingdom are derived. They were usually founded by license from the king, and supported either by specific contributions from the members, in money or goods, or by lands assigned to them by the founder\*.

The rules of several of these institutions are preserved. Among others, the following ordinances of St. Catherine's gild, at Coventry (founded in the reign of Edward III.), are well deserving the attention of village legislators. They are cited at length by Dugdale, who speaks of them as very memorable, and "manifesting the decent government, ceremony, devotion, charity, and amity of those times."

"If a member suffer from fire, water, robbery, or other calamity, the gild is to lend him a sum of money without interest.

"If sick, or infirm through old age, he is to be supported by his gild according to his condition.

"No one notorious for felony, homicide, lechery, gaming, sorcery, or heresy, is to be admitted.

"If a member falls into bad courses, he is first to be admonished, and if found to be incorrigible, he is to be expelled.

\* "The guilds, or social corporations of the Anglo-Saxons seem, on the whole," says Turner (p. 139), "to have been friendly associations made for mutual aid and contribution, to meet the pecuniary exigencies which were perpetually arising from burials, legal exactions, penal mulcts, and other payments or compensations."—*Introduction to Domesday Book*, by Sir Henry Ellis, F.R.S., and Principal Librarian to the British Museum, 1833.

"Those who die poor, and cannot afford themselves burial, are to be buried at the charge of the gild.

"The chaplain is not to frequent common taverns.

"The master of the gild was usually the person who had been mayor of Coventry the year before. He seems to have been the treasurer, as he swore to pay arrears on quitting office, and to inspect the tenements of the society.

"Mass was said every day, and there were four solemnities or feasts every year."

The gilds seem to have been encouraged by persons of rank. The Earl and Countess of Northumberland, and their eldest son, were members of St. Christopher's gild at York, and paid annually each 6s. 8d.\* They each received yearly from the gild two yards of cloth; but whether this was an article usually allowed to the members of such societies, or whether it was merely a compliment to a person of high distinction, I cannot pretend to determine.

The ancient associations, whether distinguished by the name of gild, fraternity, mystery, company, or brotherhood, seem to have been no less addicted to feasting and conviviality than some of the modern village clubs. They generally assembled once a year for the purpose of acting some interlude or pageant. There is a curious account in the *Liber Niger* of the anniversary feast of the gild of the Holy Cross at Abingdon, from which Blomefield, in his *History of Norfolk*, probably took the following account which he has given us of that festival. He says, "the fraternity held their feast yearly, on the third of May, the Invention of the Holy Cross; and then they used to have 12 priests to sing a *dirge*, for which they had given them four pence a-piece; they had also 12 minstrels, who had 2s. 3d., besides their dyet and horse-meat. At one of these feasts (23 Henry VI.) they had 6 calves, valued at 2s. 2d. a-piece; 16 lambs, 12d. a-piece; 800 eggs, which cost 5d. the hundred; and many marrow-bones, creame, and floure, besides what their servants and others brought in; and pageants, plays, and May-games, to captivate the senses of the zealous beholders, and to allure the people to the greater liberality (for they did not make their feasts without profit; for 'those that *sat* at dyner' paid one rate, and 'those that *stood* pay'd another'). These plays were the Histories of the Old and

\* They also paid 3s. 4d. each yearly to a brotherhood at Knaresborough.

New Testaments ; the persons therein mentioned being brought upon the stage, whom the poet, according to his fancy, brings in talking to one another. A specimen of one of these plays, called *Corpus Christi*, may be seen in Stephen's Addition to the Monasticon. These gilds also gave annual charity; stipends to poor persons ; found beds and entertainment to poor people that were strangers ; and had people to keep and lend the said beds, and did other works of charity."

## MODERN FRIENDLY SOCIETIES.

At what precise period of time Friendly Societies in their present form took their rise, it might be difficult to trace. The history of each society has most probably been confined to the scanty documents in its own possession, which have been lost or destroyed when the society itself has been broken up ; a result almost universal within comparatively few years from their respective foundations. One society, however, still exists in London, which states itself to have been founded so long since as the year 1715: but it retains no documents which can aid us in tracing the history of Friendly Societies generally, or even its own particular history.

In the year 1773 a bill was brought into the House of Commons by Mr. Dowdeswell, supported by Sir George Saville, Mr. Edmund Burke, and others, entitled, "An *Act* for the better Support of poor Persons in certain Circumstances, by enabling Parishes to grant them Annuities for Life, upon Purchase, and under certain Restrictions." This bill deserves to be particularly noticed, as being, it is thought, the first instance in which the legislature had its attention called to the wisdom of efficiently protecting and encouraging institutions, which have subsequently, under legislative regulation, produced so large a measure of benefit to a class of the community which is now happily beginning to understand that it *cannot* derive any permanent and real benefit but what may result from its own frugality and prudence. The object of the bill in question was to entitle parishes in England and Wales to grant life annuities to such of the inhabitants thereof as should be willing to purchase them at the price set down in the tables annexed to the bill, and making the annuities, if necessary,

chargeable on the poor's rates of the respective parishes, as a collateral security to the poor purchasers of the annuities.

The extensive tables appended to the bill were calculated by the learned Dr. Price, author of the well known "Observations on reversionary Payments." The bill passed the House of Commons, but was thrown out in the Lords, possibly from an apprehension on the part of their Lordships, that by charging the annuities contingently on the parishes, the land-owner might have been eventually damnified thereby,—at least this was a ground of objection prominently urged against the measure.

Mr. Dowdeswell's bill appears to have had the sanction of other distinguished men living at that time, as well as of those named, among whom were Dr. Benjamin Franklin, and Mr. Wedderburn, then his Majesty's Solicitor-General, and afterwards Lord Chancellor Loughborough. The laborious Mr. Baron Maseres was among the subsequent advocates for its principles, and it is probable that his commendation of it, in his treatise on the doctrine of life annuities, may have led to a bill with a like object having been introduced to the Commons House of Parliament in 1789. This bill passed that House, but was, like its predecessor, rejected by the House of Peers.

In the year 1825, a select committee of the House of Commons was appointed to consider the laws relating to Friendly Societies, of which committee Mr. Thomas Peregrine Courtenay was the active and intelligent chairman; and the report made to the House, which was ordered to be printed on the 5th July, 1825, embodied much interesting information on the subject. In that report the following observations occur:—

### *Legislative Interference.*

"No legislative interference or regulation of these societies occurred until the year 1793, when the act was passed which is known by the name of its author, Mr. George Rose.

"This act recited, 'that the protection and encouragement of Friendly Societies in this kingdom, for securing by voluntary subscription of the members thereof, separate funds for the mutual relief and maintenance of the said members, in sickness, old age, and infirmity, is likely to be attended with very beneficial effects,

by promoting the happiness of individuals, and at the same time diminishing the public burdens,' and proceeded to enact 'that it should be lawful for any number of persons in Great Britain to form themselves into and to establish one or more society or societies of good fellowship, for the purpose of raising from time to time, by subscriptions of the several members of every such society, or by voluntary contributions, a stock or fund for the mutual relief and maintenance of all and every the members thereof, in old age, sickness, and infirmity, or for the relief of the widows and children of deceased members; and to and for the several members of each such society, or such number of them as shall be nominated a committee for that purpose from 'time to time to assemble together, and to make, ordain, and constitute such proper and wholesome rules, orders, and regulations for the better government and guidance of the same, as to the major part of such society, or such committee thereof, so assembled together, shall seem meet, so as such rules, orders, and regulations shall not be repugnant to the laws of this realm, nor any of the express provisions or regulations of this act; and to impose and inflict such reasonable fines and forfeitures upon the several members of any such society, who shall offend against any such rules, orders, or regulations as shall be just and necessary for duly enforcing the same, to be respectively paid to such uses for the benefit of such society, as such society, by such rules, orders, or regulations shall direct; and also from time to time to alter and amend such rules, orders, and regulations in lieu thereof, under such restrictions as are in this act contained.' The act also provided 'that no society should be deemed to be within the meaning of the act, until the rules had been exhibited to the justices in quarter sessions, and the justices were to allow and confirm those rules only which should be conformable to the true intent and meaning of the act.'

"The rules so confirmed were not to be afterwards altered, otherwise than by three-fourths of the members present at a general meeting, or by three-fourths of a committee, if one should have been appointed for the management of the society's concerns.

"Societies were empowered to appoint treasurers and other officers.

"The act also required every society previously to the enrol-

ment of its rules, 'to declare (in one or more of them) all and every the intents and purposes for which such society is intended to be established;' and 'direct all and every the uses and purposes to which the money which shall from time to time be subscribed, paid or given for the use or benefit of such society, or which shall arise therefrom, or in anywise belong to the same, shall be appropriated and applied; and in what shares or proportions, or under what circumstances, any member of such society, or other person, shall or may become entitled to the same, or in part thereof.' And the societies were empowered to inflict penalties for any diversion or misapplication of the funds.

"It was declared unlawful 'to dissolve or determine any such society, so long as the intents or purposes declared by such society, or any of them, remain to be carried into effect, without the consent and approbation of five-sixths of the then existing members of such society; and also of all persons then receiving, or then entitled to receive relief from such society, either on account of sickness, age, or infirmity, to be testified under their hands individually and respectively.' And it was further made unlawful for 'such society by any rule, order, or regulation, to direct the division or distribution of such stock or fund, or any part thereof, to or amongst the several members of such society, other than for carrying into effect the general intents and purposes declared by them.'

"These are all the provisions of the act of 1793, which consist of restrictions imposed upon Friendly Societies: the act at the same time conferred upon these institutions certain privileges and immunities. And your committee take this opportunity of observing, that it is, in their opinion, only in consideration of these advantages conferred by the law, that any restrictive interference can be justified with voluntary associations established for lawful and innocent purposes. They wish this principle to be kept in view, in considering as well the history of the law, as the suggestions which they shall make for amending it.

"It is true that the restrictions which the act imposes are, without exception, calculated for the benefit and security of individuals; nevertheless, it is for the individuals themselves to determine whether to adopt the provisions of the statute, which offers them at the same time regulation and privilege; or to remain perfectly unfettered by any thing but their own will, and the com-



mon or more ancient law against fraud or embezzlement. For your committee apprehend that, although the act of 1793 appears to begin by rendering lawful the institution of Friendly Societies, there neither was at that time, nor is now, any law or statute which deprives the king's subjects of the right of associating themselves for mutual support.

"The privileges afforded by Mr. Rose's act to the societies which conformed to its provisions were these :—

" ' 1. Any bonds required from the treasurers or other officers of the society, were to be given to the clerk of the peace, without fee or reward, and without being liable to the stamp duty; and in case of forfeiture, it was made lawful to sue upon such bonds in the name of the clerk of the peace for the time being, for the use of the society.

" ' 2. In case of neglect of the treasurer or other officers of the society in rendering their accounts, it was made lawful for such society, 'to exhibit a petition in the High Court of Chancery, or the Court of Exchequer, in England, or the Court of Session in Scotland, or Courts of Great Sessions in Wales, who shall and may proceed thereon *in a summary way*, and make such order therein, upon hearing all parties therein, as to such court in their discretion shall seem just;' and 'no fee, reward, emolument, or gratuity whatever, shall be demanded, taken, or received by any officer or minister of such court, for any matter or any thing done in such court, in pursuance of this act;' and the court was required to assign counsel learned in the law, and to appoint a clerk of such court to advise and carry on such petition on behalf of such society, who were thereby required to do their duty therein without fee or reward; and no proceedings in the court were chargeable with any stamp duty.

" ' 3. The money of a Friendly Society in the hands of a treasurer or other person dying, was to have a preference over all the other debts of such a person.

" ' 4. The officers were invested with the privilege of 'suing and being sued.'

" ' 5. And summary proceeding before two justices was allowed in the case of a member thinking himself aggrieved.

" ' 6. But where the rules of a society provided for an arbitrator, the award was to be final, without appeal or reference to the justices.

“ ‘7. No member of Friendly Society was to be removed from any parish, until he should become actually chargeable. This was a valuable privilege in 1793, though, in consequence of a subsequent act extending the same provisions to all poor persons, it is now no longer a peculiarity.’

“ The act allowed to societies, which had been established before the passing of the act, a limited time for enrolling themselves under it: the next act in 1795 extended this period.

“ This act of 1795 also recited, that ‘several benevolent and charitable institutions and societies are formed in this kingdom, for the purpose of relieving, by voluntary subscriptions and benefactions, widows, orphans, and families of the clergy, and others in distressed circumstances;’ and that ‘such institutions have, or may have funds, which they may wish to place out on public securities, under the management of a treasurer;’ and that ‘in order to give stability to such institutions, it is necessary that their property should be secured under the authority of Parliament;’ and extended to institutions of this description the provisions of the act of 1793.

“ An act of 1803 merely provided that societies who had registered their rules at the sessions of places having peculiar jurisdiction, should be allowed to register them at the quarter sessions of the county, shire, or division; the registration in the Court of Peculiar Jurisdiction not being deemed sufficient under the act.

“ In 1809 another act was passed, reciting that great advantage has been derived, as well to the public as to individuals, by the establishment of Friendly Societies under the act of 1793; and proceeded to make further provision for applying the summary remedy allowed by the former act, by requiring that ‘the justices’ order for paying money should specify the time and manner of payment, and by other legal modes specified in the act.

“ In 1817 the provisions of former acts for the relief of poor persons equitably entitled to public funds, &c., were extended to Friendly Societies petitioning a court of equity for summary relief.

“ Another act of 1817, not specially intended for the benefit of Friendly Societies, conferred upon them the most valuable privilege which they now possess. This was the savings bank act, which, at the same time that it gave to those institutions the privi-

lege of receiving, for all money in the Bank of England, government debentures, bearing an interest of three-pence per day, allowed Friendly Societies to deposit their funds in any savings bank, and thus to derive the benefit of the high interest secured by the government debentures.

*Act of Parliament, 1819.*

"Your committee now come to the act of 1819, for the further protection and encouragement of Friendly Societies, and for preventing frauds and abuses therein. This new law made several important provisions respecting Friendly Societies. It is to the operation of these provisions that the attention of your committee has been principally directed. They propose to state the origin of the act; and in going through its several enactments, to explain the present state of the law, and their view of the amendment which it still requires."

*Committee of the House of Commons, 1825.*

The select committee of the House of Commons, in 1825, go on to report:—

"Between 1793 and 1819 a great number of Friendly Societies had been instituted. In 1802 no fewer than 9672 appear to have been returned to Parliament; and in 1815 the number of Friendly Societies were enumerated at 925,429.\* Your committee have no doubt but that, during this period, a very considerable relief was afforded to parishes, and much additional comfort derived by individuals; but the system was assuredly defective in some points, and is supposed to have conducted to some purposes foreign to the objects of its formation.

"The first and chief defect in the law, as intended for the protection of the people, was the want of sufficient security against error in the original constitution of societies. The rules of every society were to be sanctioned by the justices at quarter-sessions, who had the power of rejecting such as should appear to be not conformable to the true intent of the act of 1793. Every society which professed to provide for sickness or old age, and declared no

\* There is doubtless some error in this statement.

unlawful purpose, was necessarily admitted. An examination of the adequacy of the means by which the professed objects were to be accomplished, was not declared by the act to be, and certainly did not become in practice, a part of the duty of the magistrates. It is believed that throughout the country the justices acted ministerially, taking the word of the counsel employed to move for the registration of the articles, that nothing unlawful was contained in them. Indeed, except by reference to the tables of Dr. Price, which, though originally calculated at the desire of a committee of this House, had received no parliamentary sanction, and had not been confirmed by experience, neither counsel nor justices had the means of judging of the sufficiency of the payments required; and the tables did not extend to the cases of widows or children of deceased members, though these were cases contemplated by the law.

“Another material defect was found in the provision made against a fraudulent or inequitable disposition of the funds, on dissolution of the society. The act required that no society should be dissolved without the consent of a very great majority, not less than five-sixths of the existing members, and of the persons entitled to relief; but this majority was numerical only: and it is obvious that the younger and more healthy members, whose expectation of resorting to the common fund was more remote, might in many cases outvote those who were in daily expectation of becoming superannuated, or were liable to occasional sickness. It is true that the consent of persons actually receiving, or entitled at the time to receive relief, was required, in addition to the numerical majority; but if the moment for dissolving the club was chosen before any person had become entitled to a permanent allowance on account of old age, it might easily happen that, without any infringement of the law, a club might be dissolved, really to the serious injury of those who had contributed to it for many years; but, in truth, sufficient care had not been taken to guard against an infraction of the law. A summary legal remedy was given to all persons aggrieved; still it was a remedy by process of law, though the process was easy and inexpensive, and at the best it was a remedy, and not a prevention. A justice's order might be of little value to the injured person after the money which it adjudged to him had been squandered.

“But perhaps these cases of abuse and iniquity were less nu-

merous than those in which ruin fell upon the old and infirm, in consequence of the original error in computing the requisite contributions. This error necessarily became more apparent as time elapsed, because a yearly income might be adequate to support all the sick members of a club consisting, perhaps, of men all under 35 years of age, and to exhibit a great apparent surplus, and yet be totally insufficient, even with its accumulations, to maintain those of the body who survived 65. Under such circumstances, dissolution was the only measure to be taken. But to apportion to each individual the share of the remaining fund to which he was justly entitled required more of consideration and calculation than could be expected from every justice of the peace.

"The original insufficiency of the fund was often aggravated by another circumstance, which led also to other and great abuses. The clubs, which, as well by the disposition of men, as by the provisions of the act, were invited to meet in general assemblies, usually held their meetings in public-houses. Some of the clubs required an additional and limited contribution for the expenses of entertainment; but there is much reason to believe that encroachments also took place upon the common fund, and these were not likely to be checked if the secretary or treasurer happened to be the landlord of the house.

"Another abuse of these societies has attracted much attention, and has been specially brought under the consideration of your committee by the reference of the reports of the committee last year, to whom it was referred to inquire into the state of the law and its effects, so far as relates to the combination of workmen and others to raise wages, or to regulate their wages and hours of working. These clubs were in many instances composed of persons working at the same trade; the habits and opportunities of association which the Friendly Societies gave to them doubtless afforded facilities of combination for raising wages and other purposes, all of which were then unlawful, connected with their common business. Your committee will have to refer to this subject again, as connected with the *present* state of the law; they now mention it with the other defects and abuses of the old system, in order that the intention and effects of the existing act of 1819 may be better understood.

"The necessity of considering the law as it stood before 1819, and subsequently, will be apparent when it is recollected the soci-

eties formed previously to the 12th of July, 1819, are still not liable to the operation of the last act. And believing, as your committee do believe, that the ill opinion entertained by many persons of the system of Friendly Societies, has its origin only in an observation of abuses, many of which have been corrected by the act of 1819, and others may easily be reformed, they are anxious to separate, in their consideration, societies that are independent of that act, societies formed under it, and societies which may be formed under a modification of it, which they are prepared to suggest."

They now proceed to the several parts of the act. The preamble recites that the habitual reliance of poor persons upon parochial relief rather than upon their own industry tends to the moral deterioration of the people, and to the accumulation of heavy burdens upon parishes; and it is desirable, as well with a view to the reduction of the assessments made for the relief of the poor as to the improvement of the habits of the people, that encouragement should be offered to persons desirous of making provisions for themselves or their families out of the fruits of their own industry, and that, by the contribution of the savings of many persons to one common fund, the most effectual provision may be made for the casualties affecting all the contributors; and it is therefore desirable to afford further facilities and additional security to persons who may be willing to unite in appropriating small sums, from time to time, to the formation of a common fund for the purposes aforesaid; and it is desirable to protect such persons against the effects of fraud or miscalculation.

"Concurring fully in this averment of the utility of the institutions, as well to the community as to individuals, your committee might satisfy themselves with appealing to this legislative declaration of the grounds upon which Friendly Societies are entitled to encouragement and protection. But the opinion which some persons entertain hostile to the formation of any common fund by contribution among the lower classes, and the preference given to individual savings, induce your committee to consider the claims of these societies in some detail. It has been observed that the hostility to Friendly Societies has been nowhere more strong and controversial than among the patrons of saving-banks. Of these institutions, which are not referred to them for consideration, your committee will only say that they are undeniably

calculated for many very useful purposes, some of which cannot possibly be secured by institutions of mutual assurance; but your committee affirm without hesitation, as equally undeniable, that it is *'by the contribution of the savings of many persons to one common fund that the most effectual provision can be made for casualties affecting,'* or, as it would have been more correctly said, *'liable to affect, all the contributors.'* This proposition, which is indeed obviously true, has been well illustrated by a writer on Friendly Societies, who asks whether the advocates of a separate and exclusive saving 'will be easily persuaded to save their annual premium, instead of securing their houses against fire?'

"Whenever there is a contingency, the cheapest way of providing against it is by uniting with others, so that each man may subject himself to a small deprivation, in order that no man may be subjected to a great loss. He, upon whom the contingency does not fall, does not get his money back again, nor does he get for it any visible or tangible benefit; but he obtains security against ruin and consequent peace of mind. He, upon whom the contingency does fall, gets all that those, whom fortune has exempted from it, have lost in hard money, and is thus enabled to sustain an event which would otherwise overwhelm him.

"The individual depositor, not the contributor to a common fund, is really the speculator. If no sickness attacks him during his years of strength and activity, and he *dies* before he is past labour, he has been successful in his speculation; but if he fall sick at an early period, or if he live to old age, he is a great loser; for his savings, with their accumulations, will support him but a short time in sickness; or even if he retain something in old age, after having provided for his occasional illness, the annuity which he can then purchase will be very inferior indeed to that which he would have obtained, if he had entitled himself to the benefit of the accumulated savings of all those who, having contributed for many years to a superannuation fund, had never reached an age to require it.

"Your Committee are very anxious that, in comparing, as they feel bound, saving-banks with Friendly Societies, they should not be understood to depreciate the former; all they insist upon is, that, for the particular purposes to which Friendly Societies are applicable, saving-banks are entirely inefficient, and that those purposes are highly beneficial to the people and the state."

*Committee of the House of Commons, 1827.*

In 1827, another select committee of the House of Commons was appointed, with the same object as that of 1825, of which Mr. Courtenay was also the chairman: the report made by them to the House was ordered to be printed the 29th June, 1827; and a bill was shortly afterwards brought into parliament by Mr. Courtenay, the provisions of which accorded with the recommendation of the two committees already alluded to. Some of the principal clauses of the bill appeared, however, to a large number of the then existing Friendly Societies, to be of a nature likely to operate injuriously to their interests, and a very strong feeling was excited against the measure, which caused a multitude of petitions to be presented to the House of Commons praying that the bill might not pass. Mr. Courtenay yielded to a feeling so generally expressed; and the bill, which had been twice read and committed, was withdrawn.

*Act of Parliament, 1829 and 1832.*

As, however, there were manifest defects and inconveniences in the laws relating to Friendly Societies as they then stood, another bill to consolidate and amend the same was brought into parliament by Mr. Portman, the member for Dorsetshire, on which occasion that gentleman, it is believed, put himself into commission with a committee appointed by a general meeting of the metropolitan Friendly Societies, held on the 5th July, 1828; and he framed the bill in question, in a manner to make it meet the wishes and consist with the opinions of those parties. It subsequently passed into a law as the act of the 10 Geo. IV. c. 56. This act repealed all former acts then in force, on the same subject, and contains the law as it now stands for the regulation of Friendly Societies; it is for that reason thought well to print it at large at the end of this treatise, as well for convenience of reference, as to show the many advantages held out by it to those societies which may be formed in conformity with its provisions.

The short act of 2 Wm. IV. c. xxxvij, was passed to extend the time allowed by the act 10 Geo. IV. for the enrolment of certain societies; it also is printed at the end of the treatise.



## OBJECTS OF FRIENDLY SOCIETIES.

HAVING briefly glanced at the history of Friendly Societies in this country, it may be proper to offer a few observations as to the objects which can be best accomplished through their medium. It will be seen, by a reference to the act of 10 Geo. IV. just mentioned, that the law recognizes, as the objects of Friendly Societies, "the mutual relief and maintenance of the members thereof, their wives, children, or other relations, in sickness, infancy, advanced age, widowhood, or any other natural state or contingency, whereof the occurrence is susceptible of calculation by way of average."

Now, although the terms of this enactment will admit of a very wide range of objects, it does not follow that it would be wise that persons should form themselves into Friendly Societies for the attainment of every end that may be admissible by the act. In every institution, let it be composed of persons of whatever class it may, simplicity of detail, and consequently of working, is so desirable, that it may be well questioned, whether the sacrifice of that simplicity is ever compensated by the introduction of distinctions and options, in the applications of its main principles, which can at best be useful to a very limited number of persons, while there may be, and often is, thereby caused so much complexity in the business of an institution, that its affairs are rarely understood except by an extremely small number of its members; who, as an unavoidable consequence, obtain an undesirable influence in its transactions, an influence not always well employed. This is very objectionable in institutions like Friendly Societies, in which almost all material decisions are governed by the voice of the majority of the members of the societies. If the affairs were complicated the members would be often called on to decide matters which they did not sufficiently comprehend. One of the chief guarantees for the good management of Friendly Societies is the constant care and watchfulness exercised by all the members over the conduct of each; and such watchfulness can never efficiently exist without all possessing a competent

and clear knowledge of the details of the institution. Another strong objection to the introducing a multiplicity of objects into the constitution of Friendly Societies is, that the accounts are thereby rendered difficult of management; so that, to be moderately well kept, they must be placed under the care of persons whose time would be valuable, and who would therefore require such a remuneration as might press too heavily on the funds of institutions with means comparatively small. But the best reason for what is here urged is, that *every object really and extensively useful to Friendly Societies may be included under very few heads*; and, with a strong conviction of the usefulness of the simplicity which is recommended, the investigations hereafter given are confined to those principles which have reference to the following objects:

- 1st. The making a provision for an allowance in old age.
- 2nd. For a payment at death; and,
- 3rd. For an allowance during sickness.

These principles may, as is hereafter shown, be so applied and modified as to include every object which a Friendly Society can usefully require to accomplish.

### PRINCIPLES OF COMPUTATIONS.

IN order that we may comprehend the principles on which to determine the contributions necessary to provide the means of meeting the claims to result from the contingencies before mentioned, it will be requisite to understand, with clearness, the operation of interest of money and of annuities certain, as well as some few problems on the doctrine of probability. The first two, that is, the operation of interest and of annuities, are required in order that we may ascertain what present or periodical payments would increase to given sums by specific future periods, when such given sums might be required to have been created or realized. The doctrine of probability will teach us to determine the measure of the expectation of some supposed future event, such as sickness, happening or not happening; or, if the event be of such nature (death, for instance) that it must happen at one time or other, the doctrine of probability will enable us to determine the time at which, on an average, it may be expected to occur.

## INTEREST OF MONEY.

The problems in the doctrine of interest and annuities which will be introduced are few.

It may be premised, that *interest of money* is the compensation allowed by a borrower to a lender for the use of the sum lent.

The sum so lent is termed the *principal*. That which is called the *rate* of interest is measured by the interest allowed for a given sum lent, for a limited time.

The *rate per cent.* is the interest on £100 for a specified time. It is usually expressed by stating what is allowed for the use of £100 for one year; this is called *the rate per cent. per annum*. So if £5 be allowed for the use of £100 for one year, the rate is said to be 5 per cent. per annum. If £2. 10s. be allowed for the use of £100 for half a year, or £10 be allowed for the use of £100 for two years, the *rate* is still said to be 5 per cent. per annum.

In treating of interest of money, it is usual to distinguish what is termed *simple interest* from that which is called *compound interest*; although the principle in both is the same, acting however under different circumstances.

*Simple Interest.*

*Simple interest* is that which bears the same proportion to the whole time for which interest is allowed that the rate bears to that limited time first fixed on to regulate the rate. So that if £5 be the interest of any sum for one year, £10 will be the interest on that sum for two years, £20 will be the interest on it for four years, and £30 will be the interest for six years; and generally the interest on the like sum will be as the time for which such interest is to be found; while the interest for a like time will be as the sum bearing interest.

The sum produced, by adding to the principal its interest for a given time, is called the *amount* in that given time; so if £5 be the interest on £100 for one year, £105 would be the *amount* in one year of £100 principal, at the *rate* of 5 per cent. per annum.

If  $r$  be made to denote the interest of £ 1 for one year,

$i$  . . . . . the interest produced, on  
 $p$  . . . . . the principal, in  
 $n$  . . . . . the time, and  
 $s$  . . . . . the amount at the end of that time:

$$\text{Then } i = r p n$$

$$r = \frac{i}{p n}$$

$$p = \frac{i}{r n}$$

$$n = \frac{i}{r p}$$

$$s = p + p r n = p (1 + r n).$$

### *Compound Interest.*

If at the time when the first payment of interest becomes *due*, it be *not paid*, but is retained by the borrower, on condition that it be esteemed as an additional loan, thenceforward itself to bear interest; and the same arrangement be adopted from time to time as the interest grows due, the borrower is said to allow interest on interest, or *compound interest*. If the periods fixed on for the payment of interest be at the end of every year, then, provided the loan were to be repaid in any time less than a year, the interest to be paid would, in all cases, be made to bear such a proportion to the interest for one year as the time the principal had remained with the borrower might bear to a year, that is simple interest would be allowed for the fractional part of a year. If, however, both principal and interest remained unpaid for a period exceeding one year, but less than two years, there would be due, not only the simple interest for the whole period *on the original principal*, but the simple interest, for the time exceeding one year, *on the first year's interest*: and the like reasoning would be true if the sum borrowed were to be repaid at the end of *any* time including the fractional part of a year. Compound interest, therefore, for any time shorter than one year, (if one year be taken for the period of converting interest into principal,) is always equal to simple interest for that time. It follows, therefore, that although compound interest for a given time may be

greater, it cannot be less than simple interest. This remark is made, because some writers, from having identified the rate of the increase of money at compound interest with a geometrical ratio, have thought that compound interest, for a period shorter than a period of conversion, would be less than simple interest on a like sum for a like time; which seems contrary to the supposition which gives rise to compound interest, viz. the forbearance of the lender to receive the simple interest when due, on the understanding that, from that time, it shall be esteemed to be new principal, itself bearing interest.

The aforesaid principle may possibly be better understood by stating, as an illustration of it, the process by which the funds of a Friendly Society would accumulate. The sum which may be first invested, it may be presumed, will bear simple interest payable at the end of every year, or half year. This interest, when due, is constantly *received*, and is again constantly *invested*, itself to bear interest; so that if the first sum invested be alone kept in view, it will be seen that the principal, *bearing interest*, is at the end of the first period (a year, for instance) increased by the interest received and reinvested. At the end of the second year the principal is further increased, by not only one more year's interest on the original principal, but by one year's interest on the *first year's interest*: and it is evident that the same advantage would accrue from year to year, so long as the society did not require to *expend* the interest received. It is not necessary that the interest received should be kept apart and *separately* invested from time to time: if it be taken into the general cash of the society the effect is precisely the same; since it would, in that case, increase the sums to be invested, and would virtually, although not so obviously, allow the society to realize interest upon interest, or compound interest. Compound interest, therefore, is that of which we shall have to treat; and the four following Cases of it are those which it is most essential to explain:—

1. To find the amount to which a sum, or principal, will increase in a given time.
2. To find what present sum, or principal, will, in a given time, increase to a given amount.
3. To what amount an annuity, or given sum payable at the end of every year, will increase in a given time.

4. To find the present value of an annuity payable for a given time.

By the present value is here meant the sum of money which would, with its interest, be sufficient to provide for the several payments of the annuity, and be exhausted at the end of the term for which the annuity might be payable.

Let  $r$ , as before, signify the rate of interest, or the interest of £1 for one year.

$p$  the principal.

$n$  the time.

$s$  the amount.

$a$  the given annuity.

$M$  the amount to which the annuity would increase in a given time.

$V$  the present value of the annuity for a given time.

For the sake of simplicity, the inquiry *here* will be limited to cases in which it is supposed that the interest is converted into principal but once in each year, and that the annuities are payable but once in each year, at the end of it.

#### CASE I.

Since unity, or £1, would, in *one year*, amount to  $1 + r = 1 \times (1 + r)$ ;  $1 + r$  would be the new principal at the commencement of the *second year*, and its amount would, at the *end of the second year*, be  $(1 + r) \times (1 + r)$ ,\* which is equal to  $(1 + r)^2$ ; this, therefore, would be the new principal at the commencement of the *third year*, and the amount at the *end of the third year* would be  $(1 + r)^2 \times (1 + r) = (1 + r)^3$ , and generally the amount of unity (or £1) at compound interest, at the end of any number of years ( $n$ ) is  $(1 + r)^n$ . The amount ( $s$ ) of a given principal ( $p$ ) will, therefore, in  $n$  years, be  $= p \cdot (1 + r)^n$ . On this principle is computed Table No. I., where  $p$  is made equal to £1, and  $r$  is taken successively as equal to .02, .025, .03, .035, .04, .045, .05, .06, .07, .08. This Table, and Tables No. II., No. III. and No. IV., are of very general use, and are introduced because they will be found sufficient for the answering of most questions connected with interest and annuities certain.

\* This necessarily results from the theorem at page 26;  $s = p(1 + rn)$ . In the case adduced in the text,  $p = 1 + r$ , and  $n$  being unity, or one year,  $1 + rn$  becomes  $1 + r$ .

## CASE 2.

If we desire to find what principal ( $p$ ) would, at compound interest, amount to a given sum ( $s$ ) in  $n$  years, the operation will be the converse of the foregoing.

Since  $p(1+r)^n = s$

$$p = \frac{s}{(1+r)^n},$$

or  $s \cdot (1+r)^{-n}$ , which is the present value of £ $s$ , to be received  $n$  years hence. When  $s$  is unity (or £1), the expression becomes  $(1+r)^{-n}$ , which is the value of £1, to be received  $n$  years hence; and from this theorem Table No. II. has been calculated;  $r$  being taken of the several values mentioned in reference to Table No. I.

## CASE 3.

*Annuities Certain.*

It has been seen by Case 1, that unity (or £1) will, at compound interest, amount in  $n$  years to  $(1+r)^n$ . Now, in this value, all the excess above unity (the original principal) will arise exclusively from the interest  $r$  laid up at the end of each year, and improved at compound interest: consequently  $(1+r)^n - 1$ , will be the amount to which an annuity of £ $r$  will increase in  $n$  years; and as  $r : a ::$

$(1+r)^n - 1 : \frac{a}{r} [(1+r)^n - 1] = M$ , the amount of an annuity of £ $a$  in  $n$  years. If  $a$ , the annuity, be made equal to unity (or £1), the expression becomes  $\frac{1}{r} [(1+r)^n - 1]$ , or  $\frac{(1+r)^n - 1}{r}$ .\* This

\* Or thus; If unity, or £1, payable at the end of every year for  $n$  years, be laid up and improved at compound interest, then, at the end of the  $n$ th year, the amount of the last payment (being then just made) will be 1: the amount of the last payment but one will be  $1+r$ ; being 1 increased by its interest for one year; the amount of the last payment but two will be  $(1+r)^2$ , &c. and the amount of the first year's annuity will be  $(1+r)^{n-1}$ , because, as it would be payable at the end of the first year, it will have been improved at interest for one year less than  $n$ . But these values are the terms of a geometrical progression consisting of  $n$  terms, whose first term is 1, and the last term whereof is  $(1+r)^{n-1}$ , the common ratio being  $1+r$ . The sum of this progression is, by the common method of summing such a series,  $\frac{(1+r)^n - 1}{r}$ , the same expression for the amount of an annuity of £1 in  $n$  years, as is given in the text.

is therefore the amount to which £1 per annum will increase, if laid up and improved at compound interest for  $n$  years. Table No. III. is formed on this principle.

#### CASE 4.

The present value of a perpetual annuity of £  $a$  is that sum on which the simple interest for one year is equal to £  $a$ . £  $r$ , the simple interest on £1 for one year, is therefore the perpetual annuity which could be bought with £1; or £1 is the present value of a perpetual annuity of £  $r$ . Simple interest for one year is always as the principal sum producing it;\* therefore  $r \cdot 1 :: a : \frac{a}{r}$ . A sum equal to  $\frac{a}{r}$  is consequently the present value of a perpetual annuity of £  $a$ .

In the case of an annuity payable but once in each year, which is the case we are considering, if the first payment of the annuity be not receivable until a time more distant than one year, the annuity is said to be *deferred* for so long a term as the period at which the first payment may be receivable exceeds a year. The annuity would, however, be said to be *entered on* one year prior to the first payment becoming due.† If the first payment became due at the end of one year, the annuity would be called an *immediate* annuity.

It has been shown that the present value of *sums* to be received at the end of  $n$  years is equal to  $s \cdot (1 + r)^{-n}$ . If, therefore, for  $s$  we substitute the sum which is equal to the value of a perpetual annuity of £  $a$  we shall have  $\frac{a}{r} \cdot (1 + r)^{-n}$  for the present value of a perpetual annuity of £  $a$ , *to be entered on* at the end of  $n$  years: but the present value of an immediate perpetuity of £  $a$  is  $\frac{a}{r}$ , as has been seen; consequently the present value of such annuity *for  $n$  years* must be  $\frac{a}{r} - \frac{a}{r} \cdot (1 + r)^{-n}$  or  $\frac{a}{r} \cdot [1 - (1 + r)^{-n}]$ . If the given annuity be £1, this expression

\* See page 25.

† That is, the annuity is payable at the *end* of the year in respect of which it is to be paid.



becomes  $\frac{1}{r} \cdot [1 - (1+r)^{-n}]$  or  $\frac{1 - (1+r)^{-n}}{r}$ .\* From this theorem Table No. IV. is computed.

If the annuity of £ $a$  be not entered on until the expiration of  $n$  years, and be then to continue for  $d$  years, its present value may be shown as follows. If two persons,  $A$  and  $B$ , be together entitled to an annuity for  $n+d$  years, so that  $A$  shall enjoy the annuity for the first  $n$  years, and  $B$  for the further term of  $d$  years, then will the annuity be payable altogether for  $n+d$  years; but, by the last article, it was shown that the value of an annuity of £ $a$  for  $n$  years was equal to  $\frac{a}{r} \cdot [1 - (1+r)^{-n}]$ . This is  $A$ 's share of the annuity. The like annuity for  $n+d$  years will be worth  $\frac{a}{r} \cdot [1 - (1+r)^{-(n+d)}]$ ; consequently  $B$ 's share, or the value of the annuity for  $d$  years, to be entered on at the expiration of  $n$  years, will be  $\frac{a}{r} \cdot [1 - (1+r)^{-(n+d)}] - \frac{a}{r} \cdot [1 - (1+r)^{-n}]$ , and if the annuity be unity, or £1, the expression becomes

$$\frac{[1 - (1+r)^{-(n+d)}] - [1 - (1+r)^{-n}]}{r}$$

So that an annuity for  $d$  years, to be entered on at the end of  $n$  years, is equal to an annuity for  $n+d$  years, less an annuity for  $n$  years only, which is a case that may be solved for most practical purposes by Table No. IV.

\* The present value of £1, payable at the end of every year for  $n$  years, may be also shown as follows:—The present value of the payment to be received at the end of the first year will, as has been shown, be equal to  $(1+r)^{-1}$ ; that payable at the end of the second year,  $(1+r)^{-2}$ ; that payable at the end of the third year,  $(1+r)^{-3}$ ; and that at the end of the  $n$ th year,  $(1+r)^{-n}$ ; the sum of these values will be  $(1+r)^{-1} + (1+r)^{-2} + (1+r)^{-3} + \dots + (1+r)^{-n}$ . This, however, is a geometrical progression, whose first term and common ratio are  $(1+r)^{-1}$ , and the sum thereof, for  $n$  terms, by the ordinary method for summing of such series, will be  $\frac{1 - (1+r)^{-n}}{r}$ ; which is the same expression as that given in the text for the present value of an annuity of £1, payable for  $n$  years.

## PROBABILITY.

EVENTS which have not actually happened are, in ordinary terms, said to be either certain or uncertain or impossible; it is only to events whereof the occurrence is uncertain, that the doctrine of probability can properly be applied.

*Single Events.*

If a person be required to draw a single ball from a bag containing ten balls, all white, it is *certain* that he will draw a white ball, and it is *impossible* that he can draw a black one. But if he be required to draw a ball from a bag containing nine white balls and one black ball, it is, prior to the drawing, uncertain of what colour the ball when drawn will be: and the measure of the expectation, that a white ball or that a black ball will be drawn, is called the *probability* of the one event or of the other. Now there is evidently an equal chance, that any one of the ten separate balls will be drawn, and therefore ten different cases may occur, all equally possible; but nine of those (or  $\frac{9}{10}$ ths of the whole number) favour the drawing of a white ball; and one case only (or  $\frac{1}{10}$ th of the whole number) favours the failing to draw a white ball. But the sum of all these cases (or  $\frac{9}{10} + \frac{1}{10}$  of the whole) amounts to certainty; since of necessity a white ball must either be drawn, or fail to be drawn.

If, in considering the probability of any future event, we make  $m$  to represent all the cases which favour the happening of it, and  $n$  to represent all the cases which favour its failing; then the whole number of cases, by which it can happen or fail, will be equal to  $m + n$ , and the *probability of its happening* will, consistently with what has been said, be expressed by  $\frac{m}{m + n}$ , while the

*probability of its failing* will be expressed by  $\frac{n}{m + n}$ . The sum of these two fractions, or the probability of the event *happening or failing*, is  $\frac{m + n}{m + n}$ . This latter fraction must, it is clear, always express certainty, and it will also always be equal to unity, be the values of  $m$  and  $n$  what they may. Unity will therefore be always

a proper expression by which to represent certainty, and the probability of the happening of any event may be indicated or measured by a fraction bearing such a ratio to unity as the number of the cases which favour the *happening* of the event bear to the whole number of cases by which it may either happen or fail; and the probability of the failing of that event will be expressed by a fraction bearing such a ratio to unity as the before-mentioned cases favouring the *failing* of the event bear to the whole number of cases, by which it may either happen or fail. The usual method of expressing, numerically, the probability of an event *happening*, is by writing the fraction which shows its relation to unity. It is sometimes convenient to express the probability of the *failing* of an event, not, as before shown, by a fraction having for its numerator the number of cases which favour its failing, and for the denominator the whole number of cases by which the event may either

happen or fail, as  $\frac{n}{m+n}$ , but, by the *difference* between unity (or certainty) and the probability of the *happening* of the event, as  $1 - \frac{m}{m+n}$ , which is evidently an expression of the same value as

$\frac{n}{m+n}$ . The same method may sometimes be used to express

the probability of an event happening: this would be  $1 - \frac{n}{m+n}$ , and the sum of the two expressions must necessarily be the same as that used to denote certainty; for  $\left(1 - \frac{m}{m+n}\right) + \left(1 - \frac{n}{m+n}\right)$  is equal to  $\left(2 - \frac{m+n}{m+n}\right)$ , or unity. And this will be true, let the values of  $m$  and  $n$  be what they may.

Thus much has been said to explain what is meant by the term *probability*, its measure, and its numerical expression. The latter has been given in the form of a vulgar fraction; it is, however, written indifferently as a vulgar fraction, or as a decimal fraction, according as it may be more convenient to adopt the one form or the other, so that the probability of drawing a white or a black ball in the cases adduced would be written indifferently  $\frac{9}{10}$  and  $\frac{1}{10}$ , or .9 and .1

*Independent Events.*

In the doctrine of probability, two or more events are said to be independent, when the occurrence of one of them will not influence the happening or the failing of the other; so that if there be two bags, each containing nine white balls and one black ball, and a person be required to draw a single ball from *each* bag, the event of the drawing from the one will not at all influence the event of the drawing from the other; and such two events are therefore said to be independent of each other. If we inquire what is the probability (or more properly the measure of the probability) that a white ball will be drawn from *each* of the two bags spoken of, we must, consistently with what has been advanced, first consider how many possible cases can occur in the two drawings, and we shall perceive that in those two drawings each of the 10 balls in one bag may be combined with each of the 10 balls in the other, and, consequently, that 100 different cases are possible. As, however, there are but *nine* white balls in the one bag which can combine with each of the 9 white balls in the other ( $9 \times 9$ ) so as to produce the event inquired about, there are but 81 cases out of the 100 possible cases (or  $\frac{81}{100}$  of the whole number) that

favour the drawing of a white ball from each bag: and  $\frac{81}{100}$ , or .81, will be the fraction expressing the probability of drawing a white ball from each bag. This may possibly be made more evident by showing that of the remaining 19 possible cases not one favours the production of that event of which it was required to find the probability. It is manifest that, as each white ball in each bag could be combined with each white ball in the other bag, so could the black ball in each bag be combined with each white ball in the other, that is, each black ball could be combined with either of the 9 white balls in the other bag: these cases amount to  $9 + 9 = 18$ . The occurrence of either of these 18 cases would cause the event to fail, of which the probability was first required; and if the black ball from each bag should be drawn, the event would also fail, which case, added to the 18 adverse cases last mentioned, would make in the whole 19 possible cases unfavourable to the production of the event in question. These 19 unfavourable

favourable cases  $\left(\frac{19}{100}\right.$  of the whole number), added to the 81 favourable cases  $\left(\frac{81}{100}\right)$ , would make up the 100 possible cases, and the two together  $\left(\text{or } \frac{100}{100}\right)$  would amount to unity, or certainty. But  $\frac{81}{100}$  is the fraction that would be produced by multiplying together the two separate probabilities of drawing a white ball from either of the bags without reference to the other, that is  $\frac{9}{10} \times \frac{9}{10} = \frac{81}{100}$ ; and if we make  $m$  to represent the number of cases favourable to the production of the event indicated, and  $n$  the number of cases unfavourable to it, we shall have this expression to represent the probability of drawing a white ball from each bag, viz.,  $\frac{m}{m+n} \times \frac{m}{m+n} = \frac{m^2}{(m+n)^2}$ ; and this expression will be equally true, be the values of  $m$  and  $n$  what they may.

The probability of the happening of any three independent events may be shown to be equal to the product of the *three* separate probabilities. For if there were a third bag, like the two already described, containing nine white balls and one black ball, and the probability of a white ball being drawn from each were required, we should see first that any one of the 100 possible cases which might occur in drawing a ball from each of two bags could be combined with each of the ten balls in the third bag; or that  $(100 \times 10)$  1000 possible cases could occur in drawing a ball from each of the three bags. It is also evident that the only way in which that event could occur, of which we are now inquiring the probability, must be by a combination of some one of the 81 cases favourable to drawing a white ball from each of the *two* bags with the drawing of a white ball from the third bag, and as those 81 cases could combine with any one of the nine white balls in the third bag, there are, of the 1000 possible cases,  $(81 \times 9) = 729$  cases favourable to the drawing a white ball from each bag. The truth of this may be made clear by showing that the remaining 271 possible cases are all unfavourable to the production of the event under consideration. Thus, if any one of the 19 cases unfavourable to drawing a white ball from each of *two* bags be

combined with *any one* of the ten different possible drawings from the third bag, the event under consideration would fail. This combination includes  $(19 \times 10 =)$  190 cases; and if any one of the 81 cases *favourable* to drawing a white ball from each of two bags be combined with the possible case of drawing a *black* ball from the third bag, the event would also fail. These combinations are  $(81 \times 1 =)$  81 in number, which, added to the 190 adverse cases last mentioned, make together 271 adverse possible cases, and with the 729 *favourable* cases, account for all the 1000 possible cases that can occur in one drawing from each of the three bags. The probability, therefore, of drawing a white ball from each of the three bags is  $\frac{729}{1000}$ , or .729. But this is the product of the three fractions, which represent the *separate* probabilities of drawing a white ball from any one bag, viz.

$$\frac{9}{10} \times \frac{9}{10} \times \frac{9}{10} = \frac{729}{1000}.$$

If we represent these fractions by the symbols already used, we shall have this expression,

$$\frac{m}{m+n} \times \frac{m}{m+n} \times \frac{m}{m+n} = \frac{m^3}{(m+n)^3}.$$

As the like reasoning may be applied to any other number of independent events, we deduce therefrom this important theorem, viz., that the probability of the occurrence of any number of independent events is equal to the product of the separate probabilities of the events considered one by one.

#### *Money value of probability.*

If a bag contain  $m + n$  slips of paper, each having written on it the name of a different individual, and the condition exist that the person whose name may be first drawn shall receive  $\text{£}p$ , then in estimating the probability of any particular individual gaining the  $\text{£}p$ , we should see that in the drawing there would be  $m + n$  possible cases, one only of which would favour a particular individual gaining the  $\text{£}p$ ; the probability of any one individual gaining would therefore be  $\frac{1}{m+n}$ . If all the  $m + n$  persons were to sell their expectations to another person, the purchaser

would be *sure* to gain the  $\text{£}p$ ; and the value of all the  $m + n$  expectations would evidently be just  $\text{£}p$  ( $= \frac{m+n}{m+n} \times p$ ); but each expectation would be of the same value with all the others, and consequently would be worth  $\left(\frac{p}{m+n} = \right) \frac{1}{m+n} \times p$ : that is, the value of each individual's expectation would be worth the probability of his name being the one drawn, multiplied by the contingent gain. If A should purchase the expectations from  $m$  individuals, and B should purchase the expectations from  $n$  individuals, there would be  $m$  cases favouring A's gaining the  $\text{£}p$ ; and the total value of the probability of his gaining the  $\text{£}p$  would be  $\frac{m}{m+n} \times p$ . The same reasoning will show that the value of

B's expectation would be  $\frac{n}{m+n} \times p$ ; and as this will be true whatever may be the numerical values of  $m$ , of  $n$ , and of  $p$ , we conclude generally that the money value of the expectation of an individual, as respects the happening of a particular event, is equal to the product of the probability that such event will happen into the sum to be received, should the event occur.

### *Human Mortality.*

Let it now be assumed that a sufficient number of observations had been made to determine how many persons out of a given number born alive, say 100,000, had, on an average, been dead at the end of each year until the whole had died, then a Table, representing the numbers remaining alive at the end of each year, would be what is ordinarily termed a Table of Mortality, and such a table will furnish us with the means of measuring the probability that an individual of any given age will live to the end of a specified term. It should, however, be remarked, that any deductions to be made from such a table will be true only in proportion to the dependence we may place on the rate of mortality in future being the same as that which had been observed to have previously taken place among the number observed upon. All the computations now made to regulate the values of annuities and assurances on lives are founded on the assumption that, in like circumstances, a like *rate* of mortality will actually prevail. The

method by which the Table of Mortality has been formed, will be hereafter explained. It may, for our present purpose, be taken for granted that it correctly indicates the rate of mortality which will hereafter prevail. On reference to the table it will be seen that of 8263 persons alive at age 20, 66 would die in the following year, and that, consequently, there would be 8197 persons living at age 21. Now, if it be required to determine the probability that a person aged 20 would live one year, or to the age 21, we should say (assuming that the facts would correspond with the mortality table) that there were 8263 possible cases by which the event might happen or fail, that is, that there were 8197 cases which favoured the person being alive, or the *happening* of the event, and 66 cases which favoured his being dead, or the *failing* of the event.

It has been shown, that the probability of the happening of an event, is in the ratio of the number of cases by which it may happen, to the number of cases by which it may either happen or fail. The probability in question will therefore be expressed by the fraction  $\left(\frac{8197}{8197+66}\right) = \frac{8197}{8263}$ , the numerator of which, it will be observed, is the number living at age 21, and the denominator the number living at age 20.

Again, if we desire to find the probability, that a person aged 20 will live 20 years, or be alive at age 40, we shall, on reference to the table, see that of the 8263 persons alive at 20 years of age 6575 persons attained the age 40, the difference (or 1688) having died in the interim; we, therefore, say, that there are 6575 cases which favour the person aged 20 living 20 years longer, and 1688 cases which favour his failing to do so; the probability of his living 20 years will therefore be expressed by the fraction  $\left(\frac{6575}{6575+1688}\right) = \frac{6575}{8263}$ , which, like the former, has for the numerator the number living at the higher age, and for the denominator the number living at the younger age: and as the like reasoning may be applied to every case embraced in the mortality table, we may conclude generally, that the probability of a life of a given age, living a specified term, will be properly represented by a fraction, having for its denominator the number living at the younger age, and for its numerator the number living at an age older than the given age by the specified term.



If  $A$  be put to signify a life of a given age.

$l_a$ , the number of persons appearing, by the table, to be living at that age.

$n$ , a given number of years.

$A_n$ , to represent a life  $n$  years older than  $A$ .

And  $l_{a+n}$  the number living at the age of  $A_n$ ; then will the probability of a life aged  $A$  living  $n$  years be  $= \frac{l_{a+n}}{l_a}$ . This last expression may, however, sometimes be conveniently written  $q_{a,n}$ .

The probability that a person aged 20 will be *dead* before the end of one year, or before he attain the age 21, will be expressed

by this fraction,  $\frac{66}{8263}$ , because, as was before shown, the whole

number of cases by which the event in question can happen or fail will be 8263, and the number of cases which favour the happening of it will be 66 (or the difference between the number living at the beginning of the year and the end of it  $= l_a - l_{a+1}$ ), that being the number of persons out of 8263 who will die before they attain the age of 21; but  $\frac{66}{8263}$  is equal to the difference

between unity and  $\frac{8197}{8263}$ , the latter being the probability that

a person aged 20 will *live* one year. Adopting the symbols last used, this latter probability will be expressed thus,  $\frac{l_{a+1}}{l_a}$  or  $q_{a,1}$ ;

therefore the probability of a person *dying* in one year is equal to the difference between unity and the probability of that person

living one year: and we shall have this expression  $1 - \frac{l_{a+1}}{l_a}$  (or

$\frac{l_a - l_{a+1}}{l_a}$ ) to denote the probability that a person of the age  $A$

will die in one year, and the probability of the life  $A$  dying in the second year will be  $\frac{l_{a+1} - l_{a+2}}{l_a}$ ; because, as the difference be-

tween the number living at the beginning of any year, and the number living at the end of it, will be equal to the number dying in it,  $l_{a+1} - l_{a+2}$  will be equal to the number dying in the second

year, and consequently  $\frac{l_{a+1} - l_{a+2}}{l_a}$  will be a fraction, having for its

denominator the whole number of cases, by which the event inquired about can either happen or fail, and for its numerator the number of those cases which favour the happening of it. For a like reason,  $\frac{l_{a+1} - l_{a+2}}{l_a}$  will express the probability of the same

life dying in the third year, and  $\frac{l_{a+(n-1)} - l_{a+n}}{l_a}$  will express the probability of the life dying in the  $n$ th year. If  $n$  be the oldest age in the table of mortality, or that age at which the last survivor of the  $l_a$  individuals shall have become extinct; and the probability of the life failing in each year, between the age of  $A$  and the age  $A_n$ , the sum of such probabilities will be

$$\frac{l_a - l_{a+1}}{l_a} + \frac{l_{a+1} - l_{a+2}}{l_a} + \frac{l_{a+2} - l_{a+3}}{l_a} - - - + \frac{l_{a+(n-1)} - l_{a+n}}{l_a}, \text{ or}$$

$$\frac{l_a - l_{a+1} + l_{a+1} - l_{a+2} + l_{a+2} - l_{a+3} - - - + l_{a+(n-1)} - l_{a+n}}{l_a} = \frac{l_a - l_{a+n}}{l_a}$$

for the reason that, in the fraction preceding the last, all the terms of the numerator, except  $l_a$  and  $l_{a+n}$ , destroy each other, and  $l_{a+n}$  will be equal to 0; because, as was stated, it represents the number living at that age when the  $l_a$  lives will be *all* extinct;  $\frac{l_a - l_{a+n}}{l_a}$  will therefore be the same as  $\frac{l_a}{l_a}$ , and will express unity or certainty; which is consistent with the supposition that all the  $l_a$  lives will actually have died before the age of  $A_n$ .

The probability of a person, aged 20, being *dead* at the end of 20 years will be  $\frac{1688}{8263}$ , that is, it will be a fraction, having for its numerator the number out of 8263 persons aged 20 that would die before attaining the age 40, and for its denominator the number living at age 20; but  $\frac{1688}{8263}$  is a fraction equal to the difference between unity and the probability that a person aged 20 would *live* 20 years;\* consequently, the probability of a

\*  $1 - \frac{6575}{8263}$ . See page 38.

person aged 20 *dying* before the end of 20 years will be also expressed by this fraction,  $1 - \frac{6575}{8263}$ , and using the same symbols

as before, we shall have this expression,  $\frac{l_a - l_{a+n}}{l_a}$ , to signify the last mentioned probability. As the same reasoning might be applied, substituting, for the ages adduced, any other ages in the table of mortality, we have the general expression to denote the probability of a person aged  $A$  *dying* before the end of  $n$  years,  $1 - \frac{l_{a+n}}{l_a}$  (or  $\frac{l_a - l_{a+n}}{l_a}$ ) and since  $\frac{l_{a+n}}{l_a}$  may be also written  $q_{a,n}$ ;  $1 - q_{a,n}$  will express the probability of a life aged  $A$  dying in  $n$  years.

We may sometimes have to inquire, what is the probability that *two* persons will *both* be alive at the end of a given term; and from what has been already demonstrated, this probability will be equal to the product of the two separate probabilities of the respective persons living for the given term; so if we desire to find the probability, that two persons of the age  $A$  and  $B$  will be both alive at the end of  $n$  years, we shall have this expression,  $q_{a,n} \times q_{b,n}$ : or if we want to express the probability that  $A$  will be alive and  $B$  dead at the end of  $n$  years, it will be  $q_{a,n} \times (1 - q_{b,n})$  or  $q_{a,n} - (q_{a,n} \times q_{b,n})$ .

*Probability applied to the occurrence of Sickness.*

In applying the doctrine of probability to the measuring the expectation, that a man will be sick at a given time, we must have recourse to observations which may have been made as to the occurrence of sickness among classes so numerous as to warrant us in assuming, that in like circumstances like events will occur. It should be stated, that by the term sickness, as here used, is meant a physical incapacity to follow an ordinary employment. If the observations, on which we may rely, shall only include or record those cases in which such an incapacity did actually exist for some number of *entire days*, a man must be considered to be, on any particular day, either actually sick or actually well throughout the whole of that day. Provided the observations made had only shown the gross number of cases of sickness which

had occurred during whole years, and not the manner in which those cases were distributed over the different parts of those years, we could not commit any error of importance, by assuming that the whole number of cases which had occurred in any one year were distributed equally over each of the 365 days, of which the year consisted. If, subject to these necessary restrictions, we have found from observations, that among 1000 men, all aged 20, there had occurred, in the year following that age, *whether all the 1000 men had lived to the end of that year or not*, 5432 days of sickness, we should, on the supposition that the rate of sickness had been the same from day to day throughout the year, conclude, that on any *one day* in the year the total number of cases of sickness experienced therein had been  $\frac{5432}{365}$  days.

It will be convenient to represent the number of cases of sickness which occur in the year following age A by  $e_a$ , and putting A for age 20, the last mentioned fraction would become  $\frac{e_a}{365}$ . If 1000 men enter on the first day of that year there would, on that day, be 1000 cases by which sickness could happen or fail, and  $\frac{e_a}{365}$  cases would favour the happening of it; the probability, therefore, of the occurrence of sickness to an individual on the first day of the year in question would be  $\frac{e_a}{365} \times \frac{1}{1000}$  or  $\frac{e_a}{365000}$ .

Suppose it had been determined, that out of the 1000 men alive at age 20, eight would *die* during the year following; and we assume, that the mortality had, like the sickness, been distributed equally over the 365 days; then the number dying on each day of the year would be about .022,\* and there would only be 999.978

\* Although it is not possible, that the  $\frac{22}{1000000}$  of an individual can actually die on any one day, the reasoning founded on such a supposition is true; for, since we are only treating of the *rate* of mortality, and not of any actual *quantity* of mortality, it is immaterial whether we say, that 22 men die out of 1000000 or .022 out of 1000; in either case we only mean, that the probability of an individual dying in any one day is  $\frac{22}{1000000}$ .

persons alive on the second day of the year; consequently, on *that* day there would be only 999.978 cases by which sickness could happen or fail; and, by the previous supposition, there would be  $\frac{e_s}{365}$  cases favouring the happening of it: the probability of an individual being sick on that day would therefore be  $\frac{e_s}{365} \times \frac{1}{999.978}$ ; but as only 999.978 individuals would survive the first day the probability of an individual *living* to the second day *so as to become liable to the probability of being sick*, must be taken into account; which probability, from what was said at page 38, will be  $\frac{999.978}{1000}$ . This is a probability quite independent of that of the individual being *sick*, should he live over the first day of the year; therefore, *at the beginning of the year*, the probability of an individual being alive, *and* being sick on the second day of the year, is equal to

$$\frac{e_s}{365} \times \frac{1}{999.978} \times \frac{999.978}{1000}.$$

As the denominator of the second fraction in this expression and the numerator of the last fraction destroy each other, the probability is equal to  $\frac{e_s}{365} \times \frac{1}{1000} = \frac{e_s}{365000}$ ; which is the same probability as that of the person being sick on the first day of the year.

If the deaths on the second day were .022, there would only be left alive, on the third day of the year, 999.956, and on that day there would be but 999.956 cases by which sickness could happen or fail; while, as before, there would be  $\frac{e_s}{365}$  cases by which it could happen. The probability, therefore, of sickness happening to an individual on the third day would be  $\frac{e_s}{365} \times \frac{1}{999.956}$ ; but of the 1000 individuals who enter on the year there would be but 999.956 enter on the third day, so as to become liable to the probability of being sick. The probability

of an individual entering on the third day would be  $\frac{999.956}{1000}$ ; therefore, *at the beginning of the year*, the probability of an individual being alive and being sick, on the third day of the year, would be  $\frac{e_a}{365} \times \frac{1}{999.956} \times \frac{999.956}{1000}$ ; which, from what has

been said, it will be seen is equal to  $\frac{e_a}{365000}$ ; the same probability as that of a person being sick on the first day of the year. And, *at the beginning of the year*, the probability of a person being alive, and being sick, on any subsequent day in the year, may always be expressed by the product of three fractions, similar to those involved in the like probability for the second and third days, as just shown; the denominator of the second of those three fractions and the numerator of the third uniformly destroy each other; while the first fraction  $\frac{e_a}{365}$  would remain unchanged, as well as unity, the numerator of the second and 1000 the denominator of the third fraction; consequently, *at the beginning of the year*, the probability of an individual being alive and being sick on any one day of that year will be expressed by the fraction  $\frac{e_a}{365000}$ .

The truth of this will be somewhat more evident if we represent the number living at the commencement of the year by  $l_a$ , and the number living to the end of the first, second, third, and  $v$ th days by  $l_s, l_{ss}, l_{sss}, \dots, l_{sv}$ ; which numbers would enter on the second, third, fourth, and  $v + 1$ th days respectively. We shall then have the probability of sickness happening on the first day of the year equal to  $\frac{e_a}{365} \times \frac{1}{l_a} \times \frac{l_s}{l_a} = \frac{e_a}{365 l_a}$ ; the probability of sickness happening on the second day,  $\frac{e_a}{365} \times \frac{1}{l_s} \times \frac{l_{ss}}{l_s} = \frac{e_a}{365 l_a}$ ; on the third day,  $\frac{e_a}{365} \times \frac{1}{l_{ss}} \times \frac{l_{sss}}{l_{ss}} = \frac{e_a}{365 l_a}$ ; and the probability of sickness happening on the  $v + 1$ th day,  $\frac{e_a}{365} \times \frac{1}{l_{sv}} \times \frac{l_{sv}}{l_{sv}} = \frac{e_a}{365 l_a}$ .

From this reasoning it will be evident that  $\frac{e_a}{365 l_a}$  will, *at the*

*beginning of the year* in question, represent the probability of a person being alive, and being sick on any given day in that year. And the sum of the probabilities that an individual of the age A will be alive, and be sick, on *each* of the 365 days in the year

will be  $\frac{e_a}{365 l_a} \times 365 = \frac{e_a}{l_a}$ , which is a fraction, having for its

denominator the number of persons observed upon, who enter on a particular year of age, and for its numerator the number of days' sickness experienced, during the year following, among those persons in the aggregate. While, therefore, the sum of such probabilities

for the year following the age A may be represented by  $\frac{e}{l_a}$

the sum at age A, of the daily probabilities of sickness for the year following the age one year older than A may be represented by . . . . .  $\left. \begin{array}{l} \frac{e_{a+1}}{l_{a+1}} \end{array} \right\}$

at age A<sub>2</sub>, the sum of such probabilities for the year following will be . . . . .  $\left. \begin{array}{l} \frac{e_{a+2}}{l_{a+2}} \end{array} \right\}$

and at age A<sub>n</sub> . . . . .  $\frac{e_{a+n}}{l_{a+n}}$

The probability at the beginning of the several years of an individual being sick on any one day in those years will be

$\frac{e_a}{365 l_a}$ ,  $\frac{e_{a+1}}{365 l_{a+1}}$ ,  $\frac{e_{a+2}}{365 l_{a+2}}$ , and  $\frac{e_{a+n}}{365 l_{a+n}}$  respectively.

From what has been said it will appear that the *sum of the probabilities* of a person being sick on each day in a year will be the same as the fraction which represents the mean number of days' sickness experienced in a particular year by each individual entering on it. As it is universal in the practice of Friendly Societies to measure the allowance made to their members during sickness by the allowance that may be made in *one week*, the *mean duration or quantity of sickness* experienced by an individual in the year following any age will, in this treatise, *be always expressed in weeks and parts of weeks*. For the year following age 20, such mean quantity is  $\frac{5432}{1000}$  days, or  $\frac{776}{1000}$  expressed in the denomination of a week; and such mean quantity for the year following the age A will, as well as the sum of the daily

probabilities, be properly represented by . . . . .  $\frac{e_a}{l_a}$

while the mean quantity experienced in the year following  
the age one year older than A will be properly repre-  $\left. \begin{array}{l} \frac{e_{a+1}}{l_{a+1}} \end{array} \right\}$   
sented by . . . . .

in the year following the age two years older than A, by  $\frac{e_{a+2}}{l_{a+2}}$

and in the year following the age  $n$  years older than A, by  $\frac{e_{a+n}}{l_{a+n}}$

When therefore the mean quantity of sickness in any year is hereafter spoken of, the sum of the daily probabilities of sickness in that year is always to be understood.

## DATA,

### *For determining the Rate of Human Mortality and of Sickness.*

It was stated at page 24, that our investigations would be confined to those principles which have reference to the providing for—

- 1st. An allowance in old age ;
- 2nd. For a payment at death ; and
- 3rd. For an allowance in sickness :—

and having briefly considered the subject of interest of money, as well as the nature of the doctrine of probability, and shown that, in applying the latter to questions concerning the duration of human life and the occurrence of sickness, we must have reference to observed *facts* whereon to found our reasonings, we will now proceed to consider the means of acquiring those facts, and the method of applying them when acquired.

### *Human Mortality.*

First, as to the duration of human life. If it could be done, the most simple mode of ascertaining the actual number of deaths which, on an average, happen in the several years of life among a given number of persons alive at the beginning of each year, would be to record the births of a large number of children, and



then take a correct account of the numbers that remained alive at the end of the first year, at the end of the second year, third year, and so from year to year, until the whole number became extinct. These numbers being arranged in the order of the several years of age to which they applied, would themselves form what has been referred to at page 37, as constituting a Table of Mortality; and the differences between each two successive terms in such table would be the numbers dying in the several years of life. The sum of those differences would evidently be equal to the first term of the table, or the number born.

The method alluded to of forming a mortality table is however scarcely practicable; and if it were so, it is by no means certain that it is desirable so to form one; since results equally satisfactory may be obtained in a much shorter time, and with much less trouble, than that method would require. The real end to be obtained, for answering all the purposes of inquiries about the values of annuities and assurances on lives, is to find accurately the numbers of persons, entering on each year of life, who survive and enter on the ages one year older respectively, and consequently the values of  $q_{a,1}$ ,  $q_{(a+1),1}$ ,  $q_{(a+2),1}$ , &c. for each year of life. It is obvious, from what was said at page 39, that, if these values be known for each year of life, we shall be able to assume, at pleasure, any number of persons to be living at the youngest age intended to be introduced into a table of mortality, as age A, and by multiplying such number by the fraction  $q_{a,1}$ , which expresses the probability of a person of that age living one year, we shall obtain the number who would survive to the age one year older. It has been seen that the probability of a life aged A surviving one year will be correctly represented by the fraction  $\frac{l_{a+1}}{l_a}$ . If, therefore, we have found  $q_{a,1}$  a fraction,

which by the definition at p. 39 is of equal value with  $\frac{l_{a+1}}{l_a}$ , and we know the numerical value of  $l_a$ , we shall find the numerical value of  $l_{a+1}$ , by multiplying  $l_a$  by the fraction  $q_{a,1}$ , because  $l_{a+1} = l_a \times \frac{l_{a+1}}{l_a}$ ;  $\frac{l_{a+1}}{l_a}$  being equal to  $q_{a,1}$ . Having, according to this formula, found the numerical value of  $l_{a+1}$ , and knowing also the numerical value

of  $q_{(a+1)}$ , the fraction which represents the probability of a life aged  $A_1$  living one year, to be identical with  $\frac{l_{a+2}}{l_{a+1}}$ , then, since

$l_{a+2} = l_{a+1} \times \frac{l_{a+2}}{l_{a+1}}$ , we find the numerical value of  $l_{a+2}$ ; from which

value, together with the fraction  $q_{(a+2)}$ , which represents the probability that a life of the age  $A_2$  will live one year, we, in a like manner, find the numerical value of  $l_{a+3}$ ; and provided we know the values of the *probabilities* that a person of every year of age will survive one year, we can, by a like process, complete a table of mortality to that age when all the lives will become extinct.

To ascertain the probabilities above referred to, it is requisite to bring under our observation a considerable number of persons, while passing through each year of life, and to record the numbers that die in each year respectively; but it is not at all necessary that the individuals who may pass through one year shall be the same individuals who may pass through any other year. All that is required is that they shall be persons placed in like circumstances, except as to age. If, therefore, we could, in *one year*, extend our observations over a large class of men, containing persons of all ages, our end might seem to be obtained; but inasmuch as it is known that mortality, among large classes, is influenced by the state of the atmosphere and by other temporary causes, it is desirable that our observations should apply to a longer period than a single year, so that what may be called an average state of external circumstances may obtain. In using the knowledge acquired by observations, such as we are considering, it is essentially necessary to bear in mind that, with whatever degree of skill and care those observations are made, their result can only be safely applied to the circumstances of a class in society similar to that to which the persons observed upon belonged. So, if the observations had been made in England, it will readily be concluded that corresponding results could not be expected to occur in Bengal; and if the observations had been made among a class of persons who had been *selected* on account of the general longevity of their families, or of their own firm constitutions, as promising advantage to those who might purchase annuities on their lives, it will be easily concluded that the rate of mortality among such a class would be very different from that which would prevail among a mass of persons taken indis-

criminally from the same community; without reference to any other circumstance than to the mere fact of their being *alive*; although some of them might, when so taken, be actually at the point of death. Observation has very satisfactorily established the truth of these remarks.

No successful attempt appears to have been made to collect a sufficient number of facts on which to place a reasonable reliance, as to the occurrence of sickness and mortality among the labouring classes in England, that is among those classes by whom Friendly Societies are usually formed, until the Society, under whose superintendence this treatise is published, caused schedules to be printed in the following form:—

## SCHEDULE A

Society held at...

established on the—

In filling up the following Forms, it is requested that in any Case in which a particular Sickness may have commenced in one year, and continued in the following year, care may be taken to ascertain the proper quantity of Sickness to each year.—For instance, if a Member had received Full Pay from the 6th of December, 1846, to the 10th of January, 1847, it would be proper to write under the General Head — Full Pay; and the year 1846, 3 Weeks 4 Days; and under the year 1847 — 1 Week 3 Days. It would be desirable also to obtain the printed Rules of each Society.

A List of the present Members of the Society.

[illegible]

**SCHEDULE B.**

Society held at \_\_\_\_\_ established on the \_\_\_\_\_

NAMES.	Date of Birth,	Date of Admission into the Society.	Date of becoming a Free Member.	Age at the Time of Admission.
M. R. This column may be filled up with initials, and add the trade or occupation.				



It will appear, from the headings of the several columns in those schedules, that the period over which the observations were meant to extend embraced a term of five years, from January 1823 to January 1828. It was thought that that time would be sufficient to obtain a fair average of what have been called external circumstances; and it was, moreover, deemed desirable not to ask the Friendly Societies, to whom the schedules were sent, to make returns for a time far removed from that in which they might be making them; in the belief that the accounts or records of the societies might not enable them to go far back with the same hope of accuracy that a reference to more recent accounts would warrant. It was also believed that, if such returns had been asked from any one society, as would have required an extraordinary share of labour to furnish, the practical effect of doing so would have been that, in many cases, no returns at all would have been got. Sets of these schedules were sent to Friendly Societies in most of the counties in England, and from almost every part of the country returns of them filled up were obtained; many of them, however, were defective—some not stating the ages of the members, and others only returning one or two out of the three schedules sent. A sufficient number of returns were, however, received to show the progress of the members of different societies, taken indiscriminately from all parts of England, while passing through, in the aggregate, 24,323 years of life, principally between the age 20 and the age 70.

*Arrangement of Data collected by the Society for the Diffusion of Useful Knowledge.*

The 24,323 cases above-mentioned were arranged in the following manner:—

Columns were ruled, and headed with the numbers corresponding to each year of life, from age 17 to age 95, the former being the youngest and the latter the oldest life in the returns; and, under each age, the column was subdivided into three parts. The first subdivision to contain a mark (1), signifying that an individual who might, at the commencement of any year, be of the age at the top of the column, came under observation: the second subdivision to contain the number of weeks or days of sickness which that individual might have experienced in the year following: and the third division to contain a mark (1),

which should denote the death of the individual indicated in the first column, if it occurred in that year.

Age 17.				Age 18.				Age 19, &c.			
Cases.	Sickness.		Deaths.	Cases.	Sickness.		Deaths.	Cases.	Sickness.		Deaths.
	Weeks.	Days.			Weeks.	Days.			Weeks.	Days.	
1	..	..	...	1	2	..	...	1	..	..	...
..	..	..	...	1	..	..	...	1	..	..	...
..	..	..	...	1	..	..	...	1	..	..	...
..	..	..	...	..	..	..	...	1	..	..	...
..	..	..	...	..	..	..	...	1	..	..	...
..	..	..	...	..	..	..	...	1	..	..	...
..	..	..	...	..	..	..	...	&c.	&c.	&c.	...
..	..	..	...	..	..	..	...	..	..	..	...
Totals	1	..	..	3	2	..	...	42	23	5	...

If the individual experienced no sickness in the year following, the age under which he was classed, the mark put to signify his registration at that age remained without note against it; and if he lived to the end of the year, the third column was also left blank. The sums of these columns would therefore give, first, the total number of persons entered at each year of life; secondly, the total number of weeks and days of sickness experienced among them while passing through the following year; and, thirdly, the number of them who had died.

The following Table is the result of the arrangement just mentioned:

AGE.	Number of Members.		Gross term of Sickness experienced in the Year following each Age.		Gross Number of Deaths happening in the Year following each Age.		AGE.	Number of Members.		Gross term of Sickness experienced in the Year following each Age.		Gross Number of Deaths happening in the Year following each Age.	
	weeks.	days.	weeks.	days.	weeks.	days.		weeks.	days.	weeks.	days.	weeks.	days.
17	1	..	..	..	23	430	384	1	4	29	974	1017	5
18	3	..	..	..	24	562	469	4	5	30	1040	649	1
19	42	23	5	..	25	634	520	4	6	31	1045	921	2
20	95	70	1	..	26	744	460	1	5	32	1032	1004	8
21	179	130	4	2	27	844	514	3	8	33	1032	1043	2
22	316	258	..	1	28	903	727	5	11	34	966	832	..



*Arrangement of Data, continued.*

AGE.	Number of Members.			Gross term of Sickness ex- perienced in the Year fol- lowing each Age.	Gross Number of Deaths hap- pening in the Year following each Age.	AGE.	Number of Members.			Gross term of Sickness ex- perienced in the Year fol- lowing each Age.	Gross Number of Deaths hap- pening in the Year following each Age.			
	weeks.	days.					weeks.	days.						
35	964	910	5	21	56	250	763	3	15	76	8	230	.	.
36	932	791	3	16	57	217	524	3	6	77	8	263	2	.
37	870	1178	4	14	58	187	459	4	7	78	6	172	.	1
38	774	943	5	17	59	161	471	2	7	79	5	165	.	.
39	735	906	4	10	60	123	392	4	5	80	2	...	.	.
40	690	699	3	9	61	125	545	2	4	81	3	7	.	.
41	652	672	5	9	62	113	538	1	4	82	4	.	1	.
42	638	738	4	16	63	99	560	.	6	83	2	.	.	.
43	628	841	3	10	64	92	460	3	7	84	2	12	.	.
44	605	795	2	11	65	86	504	5	4	85	4	58	.	.
45	581	755	1	10	66	69	365	3	5	86	4	112	.	.
46	534	795	.	13	67	58	424	4	2	87	3	105	.	.
47	475	595	2	8	68	48	513	4	2	88	3	156	.	.
48	399	748	4	10	69	40	579	2	3	89	3	156	.	.
49	381	667	5	7	70	32	423	2	2	90	1	52	.	.
50	343	623	3	10	71	26	412	.	2	91	2	52	.	.
51	314	497	3	12	72	21	253	5	4	92	1	..	.	.
52	288	631	4	4	73	16	52	3	2	93	1	..	.	.
53	286	539	2	2	74	10	59	5	2	94	1	..	.	.
54	268	629	4	8	75	11	239	4	1	95	.	..	.	.
55	273	737	1	6										

From a careful examination of the ages assigned to the members, in those returns in which the dates of birth were given, it appeared to be the almost invariable practice of the parties who filled up the schedules, to state the age of each member *as on the last birth-day*. In arranging the returns it has been assumed that such practice was uniformly adhered to. And it has, from this consideration, been further assumed, that the aggregate of those persons stated to be of any two following ages might safely be considered as, on an average, to be of the higher of those two ages. This may not be precisely true; since the numbers of any two following ages are not equal, but that circumstance will have no sensible effect on the deductions eventually made from the data. The sum of all the sickness experienced among those of any two consecutive ages would, on the above assumption, represent the sickness experienced in one year among the number of

persons assumed to be living at the higher of the two ages: and the sum of the numbers dying, in the years following any two consecutive ages, would properly indicate the number of deaths which took place in the following year among the same number of persons.

Consistently with what has been just stated, the one member said to be of the age 17, and the *three* members said to be of the age 18, have been considered to be *four* members of the full age of 18; and among those four members two weeks of sickness was experienced the year following.

The three members stated to be of the age 18, and the forty-two members stated to be of the age 19, have been considered as forty-five of the age 19; among whom twenty-five weeks, five days of sickness was experienced in the year following.

The several ages observed upon were then combined, two and two, in the manner pointed out; and the following Table gives the result of such combination:

Age.	Members.	Sickness.		Number of Deaths.	Age.	Members.	Sickness.		Number of Deaths.	Age.	Members.	Sickness.		Number of Deaths.
		weeks.	days.				weeks.	days.				weeks.	days.	
18	4	2	.	..	44	1233	1636	5	21	70	72	1002	4	5
19	45	25	5	..	45	1186	1550	3	21	71	58	835	2	4
20	140	94	.	..	46	1115	1550	1	23	72	47	665	5	6
21	277	200	5	2	47	1009	1391	2	21	73	37	306	2	6
22	495	388	4	3	48	874	1318	.	18	74	26	112	2	4
23	746	642	1	4	49	780	1416	3	17	75	21	299	3	3
24	992	880	5	9	50	724	1291	2	17	76	19	469	4	1
25	1197	1017	2	11	51	657	1121	.	22	77	16	493	2	.
26	1378	980	5	11	52	602	1129	1	16	78	14	435	2	1
27	1588	974	4	13	53	574	1171	.	6	79	11	337	.	1
28	1747	1242	2	19	54	554	1169	.	10	80	7	165	.	.
29	1877	1745	4	23	55	541	1366	5	14	81	5	7	.	.
30	2014	1667	.	27	56	523	1500	4	21	82	7	7	.	1
31	2085	1570	3	26	57	467	1288	.	21	83	6	.	.	1
32	2077	1925	2	19	58	404	984	1	13	84	4	12	.	.
33	2064	2047	2	21	59	348	931	.	14	85	6	110	.	.
34	1998	1875	2	24	60	284	864	.	12	86	8	170	.	1
35	1930	1742	5	32	61	248	938	.	9	87	7	220	.	1
36	1896	1702	2	37	62	238	1083	3	8	88	6	264	.	.
37	1802	1970	1	30	63	212	1098	1	10	89	6	312	.	.
38	1644	2122	3	31	64	191	1020	3	13	90	4	208	.	.
39	1509	1850	3	27	65	178	965	2	11	91	3	104	.	.
40	1425	1606	1	19	66	155	870	2	9	92	3	52	.	.
41	1342	1372	2	18	67	127	790	1	7	93	2	..	.	.
42	1290	1411	3	25	68	106	938	2	4	94	2	..	.	.
43	1266	1580	1	26	69	88	1093	.	5	95	2	..	.	.

From these data the following Table was formed :

AGE.	Mean Annual quantity of sickness expressed in Weeks and decimale of a Week.	Annual Rate of Mortality, showing out of what Number one would die.	AGE.	Mean Annual quantity of sickness expressed in Weeks and decimale of a Week.	Annual Rate of Mortality, showing out of what Number one would die.	AGE.	Mean Annual quantity of sickness expressed in Weeks and decimale of a Week.	Annual Rate of Mortality, showing out of what Number one would die.
18	•500	.....	44	1•328	58•71	70	13•930	14•50
19	•574	.....	45	1•308	56•48	71	14•402	14•50
20	•671	.....	46	1•390	48•48	72	14•167	7•83
21	•725	138•50	47	1•379	48•05	73	8•279	6•17
22	•785	165•00	48	1•508	48•56	74	4•321	6•50
23	•861	186•50	49	1•816	45•88	75	14•262	7•00
24	•886	110•22	50	1•784	42•59	76	24•719	19•00
25	•850	108•82	51	1•706	29•86	77	41•111	.....
26	•712	125•27	52	1•875	37•63	78	31•095	14•00
27	•614	122•15	53	2•040	95•67	79	30•636	11•00
28	•711	96•95	54	2•110	55•40	80	23•571	.....
29	•930	81•69	55	2•526	38•64	81	1•400	.....
30	•828	74•59	56	2•869	24•91	82	1•000	7•00
31	•753	80•19	57	2•758	22•24	83	.....	6•00
32	•927	109•32	58	2•436	31•08	84	3•000	.....
33	•992	98•29	59	2•675	24•86	85	18•333	.....
34	•939	83•25	60	3•042	23•67	86	21•250	8•00
35	•903	60•06	61	3•782	27•67	87	31•428	7•00
36	•898	51•24	62	4•553	29•75	88	44•000	.....
37	1•093	60•07	63	5•180	21•20	89	52•000	.....
38	1•291	53•03	64	5•385	14•69	90	52•000	.....
39	1•226	55•89	65	5•423	16•18	91	34•666	.....
40	1•127	75•00	66	5•615	17•22	92	14•000	.....
41	1•023	74•56	67	6•222	18•14	93	.....	.....
42	1•094	51•60	68	8•852	26•50	94	.....	.....
43	1•249	48•69	69	12•420	17•60	95	.....	.....

As there is considerable irregularity in the mean quantity of sickness, and in the rate of mortality from year to year, as shown in the above Table, it was thought well again to combine the observations in each five successive years, making the aggregate of the numbers of persons at any five consecutive ages, to indicate the number of persons of the mean age; and the aggregate of sickness and of the mortality, at those five ages, to represent the quantity of sickness and number of deaths occurring among the aggregate number of persons of the mean age.

The following Table was obtained by so combining the ages five and five :

Mean Age.	Number of Persons of the five consecutive Ages.		Aggregate of Sicknesses at the five consecutive Ages.		Number of Deaths at the five consecutive Ages.	Mean Age.	Number of Persons of the five consecutive Ages.		Aggregate of Sicknesses at the five consecutive Ages.		Number of Deaths at the five consecutive Ages.	Mean Age.	Number of Persons of the five consecutive Ages.		Aggregate of Sicknesses at the five consecutive Ages.		Number of Deaths at the five consecutive Ages.
	weeks.	days.	weeks.	days.			weeks.	days.	weeks.	days.			weeks.	days.	weeks.	days.	
20	961	711	2	5	45	5909	7709	112	70	371	4335	1	24				
21	1703	1351	3	9	46	5417	7446	5	104	71	302	3903	1	26			
22	2650	2206	3	18	47	4964	7226	3	100	72	240	2922	3	25			
23	3707	3129	5	29	48	4502	6967	2	96	73	189	2219	.	23			
24	4808	3909	5	38	49	4044	6538	1	95	74	150	1853	4	20			
25	5901	4495	5	48	50	3637	6276	.	90	75	119	1681	1	14			
26	6902	5096	.	63	51	3337	6129	.	78	76	96	1810	1	9			
27	7787	5960	5	77	52	3101	5881	3	71	77	81	2034	5	6			
28	8604	6610	3	93	53	2928	5957	.	68	78	67	1900	2	3			
29	9291	7200	1	106	54	2794	6336	.	67	79	53	1437	4	2			
30	9800	8150	5	114	55	2659	6495	3	72	80	44	951	2	3			
31	10117	8955	5	116	56	2589	6308	4	79	81	36	516	.	3			
32	10238	9085	3	117	57	2283	6070	4	83	82	29	191	.	2			
33	10154	9161	2	122	58	2026	5567	5	81	83	28	136	.	2			
34	9955	9293	1	133	59	1751	5005	1	69	84	31	299	.	3			
35	9690	9338	.	144	60	1522	4800	4	56	85	31	512	.	3			
36	9270	9113	1	154	61	1330	4914	4	53	86	31	776	.	2			
37	8781	9388	2	157	62	1173	5004	1	52	87	33	1076	.	2			
38	8276	9251	4	144	63	1067	5105	3	51	88	31	1174	.	2			
39	7722	8721	4	125	64	974	5037	5	51	89	26	1108	.	1			
40	7210	8363	.	120	65	863	4744	3	50	90	22	940	.	.			
41	6832	7830	4	115	66	757	4584	4	43	91	18	676	.	.			
42	6554	7607	.	109	67	654	4657	1	36	92	14	364	.	.			
43	6317	7551	2	111	68	548	4694	3	30	93	12	156	.	.			
44	6090	7729	1	116	69	451	4659	3	25								

It was shown, at page 45, that if sickness be expressed in weeks and parts of a week, the mean quantity of sickness, experienced by an individual in one year, would be represented by a fraction, having for its denominator the number of persons observed upon, and for its numerator the number of weeks and parts of weeks of sickness experienced in a year by those persons in the aggregate. Now the first case, in the above Table, supposes 961 persons of the age 20 to have been observed upon; and shows that, among those 961 persons, 711 weeks and 2 days of sickness were experienced in the year following that age; consequently, the fraction representing the mean quantity of sickness which each individual of that age may expect to suffer, in the following

*Note.*—From the numbers of the several ages not being all the same, the average may not be of the mean age exactly; but, as was before observed, this will have an unimportant influence on the results.

year, will, neglecting the two days sickness, be  $\frac{711}{961}$  weeks, the decimal fraction equivalent to which is .740. In like manner, the mean quantity of sickness, for the year following age 21, will be  $\frac{1351}{1703}$  weeks, equal to the decimal .793 of a week.

Again it will be seen that, out of the 961 aged 20, five persons had died in the following year; or that, in that year, one person had died out of every 192.2 that entered upon it. Out of 1703 aged 21, nine persons died in the following year, or one out of every 189.22.

Similar results for all the other ages embraced in the last-mentioned Table were found, and they appear in the following Table.

AGE.	Mean quantity of Sickness experienced by a person in the Year following each Age; expressed in Weeks and decimals of a Week.	Number out of which one person would die.	AGE.	Mean quantity of Sickness experienced by a person in the Year following each Age; expressed in Weeks and decimals of a Week.	Number out of which one person would die.	AGE.	Mean quantity of Sickness experienced by a person in the Year following each Age; expressed in Weeks and decimals of a Week.	Number out of which one person would die.
20	.740	192.20	45	1.327	51.87	70	11.685	15.46
21	.793	189.22	46	1.375	52.09	71	12.924	11.62
22	.833	147.22	47	1.456	49.64	72	12.177	9.60
23	.844	127.83	48	1.548	46.90	73	11.741	8.22
24	.813	126.53	49	1.617	42.57	74	12.358	7.50
25	.762	122.94	50	1.726	40.41	75	14.128	8.50
26	.738	109.56	51	1.837	42.78	76	18.856	10.67
27	.766	101.13	52	1.897	43.67	77	25.121	13.56
28	.768	92.52	53	2.035	43.06	78	28.363	22.33
29	.775	87.65	54	2.268	41.70	79	27.126	26.50
30	.832	85.96	55	2.443	36.82	80	21.621	14.67
31	.885	87.22	56	2.437	32.77	81	14.333	12.00
32	.887	87.50	57	2.659	27.51	82	6.586	14.50
33	.902	83.23	58	2.748	25.01	83	4.837	14.00
34	.934	74.85	59	2.859	25.38	84	9.645	10.33
35	.964	67.29	60	3.154	27.18	85	16.516	10.33
36	1.015	60.19	61	3.695	25.09	86	25.032	15.50
37	1.069	55.93	62	4.266	22.56	87	32.606	16.50
38	1.118	57.49	63	4.785	20.92	88	37.871	15.50
39	1.130	61.78	64	5.172	19.10	89	42.615	26.00
40	1.160	60.08	65	5.498	17.26	90	42.727	
41	1.146	59.64	66	6.056	17.60	91	37.556	
42	1.161	60.13	67	7.121	18.17	92	26.000	
43	1.195	59.91	68	8.567	18.27	93	.....	
44	1.269	52.50	69	10.332	18.04			

At page 39, it was demonstrated, that the probability of a person *dying* in one year would be correctly represented by a fraction, having, for its denominator, the number of persons observed upon at any age, and for its numerator, the number of persons dying in the following year. In the last Table but one, at page 58, are shown the numbers observed upon at each age; and there are also shown the numbers who died in the year following. The fraction is therefore immediately seen which will represent the probability at each age of a person dying in the following year. It was also demonstrated, at page 39, that the probability of a person *living* one year was equal to the difference between unity and the probability of a person *dying* in that year. It is therefore clear, that the Table at page 58 will furnish us with the means of determining the probability of a person *living* one year, for every year of age embraced in the Table; and, as was shown at page 47, this knowledge will enable us to assume, at pleasure, any number of persons to be living at the youngest age in the Table, and thereupon to construct a Table of Mortality in its usual form. This course was adopted, and from the data in Table at page 58, the following mortality Table was computed:

AGE.	Numbers living at the beginning of the Year.	Numbers dying in the Year.	AGE.	Numbers living at the beginning of the Year.	Numbers dying in the Year.	AGE.	Numbers living at the beginning of the Year.	Numbers dying in the Year.	AGE.	Numbers living at the beginning of the Year.	Numbers dying in the Year.
20	5132	27	38	4276	76	56	2964	80	74	1138	139
21	5105	27	39	4200	73	57	2884	83	75	999	133
22	5078	34	40	4127	67	58	2796	102	76	866	102
23	5044	39	41	4060	68	59	2694	108	77	764	72
24	5005	40	42	3992	67	60	2586	102	78	692	51
25	4965	39	43	3925	65	61	2484	91	79	641	29
26	4926	40	44	3860	68	62	2393	95	80	612	23
27	4886	45	45	3792	72	63	2298	102	81	589	40
28	4841	48	46	3720	72	64	2196	105	82	549	46
29	4793	52	47	3648	70	65	2091	109	83	503	35
30	4741	54	48	3578	72	66	1982	115	84	468	33
31	4687	54	49	3506	75	67	1867	106	85	435	42
32	4633	53	50	3431	81	68	1761	97	86	393	38
33	4580	52	51	3356	83	69	1664	91	87	355	23
34	4528	54	52	3267	85	70	1573	87	88	332	20
35	4474	60	53	3182	73	71	1486	96	89	312	20
36	4414	66	54	3109	72	72	1390	120	90	292	11
37	4348	72	55	3037	73	73	1270	132			

Notwithstanding the large number of individuals from among whom the foregoing experience has been procured, whose progress in the whole, through 24,323 years of age, has been shown in the Table at page 54, a series has not been obtained minutely uniform; but it is nevertheless sufficiently uniform to warrant very considerable confidence being placed in the results deduced from it. It will be perceived, by the Table at page 57, that, with slight fluctuations, both the rate of sickness and the rate of mortality increase pretty regularly from age 20 to age 70. This regularity in the series would of itself be a forcible reason for placing reliance on the correctness of the data from which it is deduced, if there existed nothing with which it could be compared, in order to test its accuracy; but, since the mortality and sickness are combined in the same returns, and there does exist means of judging of the correctness of the recorded mortality, by comparing it with similar facts given by several writers of eminence, we shall, by establishing the accuracy of the returns so far as the *mortality* is concerned, be warranted in claiming for them an equal share of credit for what regards the quantity of *sickness* indicated therein.

Notwithstanding however what is here said, it will be very desirable that future collections should be made of the experience of Friendly Societies, as to the quantity of sickness occurring among the members, either for the purpose of verifying or of correcting the result of this first collection in England of facts similar to those alluded to.

The Tables to which most reference has been had, as indicating the rate of *human mortality*, are those formed by the late Dr. Price from the bills of mortality at Northampton, and from extensive observations in the kingdom of Sweden; by Mr. Milne, from observations made by Dr. Heysham in the city of Carlisle: more recently, much and merited notice has been drawn by Mr. Lubbock to the observations made at Chester by the late Dr. Haygarth, and a Table, deduced therefrom, is given by Mr. Lubbock in the Cambridge Philosophical Transactions. The following comparison of the different Tables of mortality here spoken of; as well as Tables recently formed from the experience among various classes of government annuitants in this country; and also the Table now printed, as reduced from the English

Friendly Societies' returns, will show that, although the latter does not correspond very closely with any one of the others, it does not at the ages between 20 and 70 inclusive depart from either Table more than might be anticipated from a knowledge of the fact that nearly all the members of Friendly Societies belong to one class of the community; while all classes were mixed in the communities, among whom the observations were made that served for the bases of most of the other Tables.



Number out of which one Person would die in each Year of Life, according to the under-mentioned Tables of Mortality.

Age.	By the Carlisle Table.	By the Government Assurance Table.	By the Chester Table.	By the London Table.	By the Northampton Table.	By the experience of the Friendly Societies.
20	141.63	87.061	84.91	111.66	71.28	192.20
21	143.98	74.241	83.91	110.06	67.47	189.22
22	142.98	70.025	76.00	109.65	65.47	147.22
23	141.98	70.929	75.00	98.78	63.47	127.83
24	136.98	71.313	74.09	97.79	64.47	126.53
25	135.72	70.439	67.38	96.78	63.47	122.94
26	135.72	78.573	66.38	95.78	62.47	109.56
27	129.73	77.413	65.38	94.78	61.47	101.13
28	114.96	77.838	69.75	93.78	60.47	92.52
29	101.75	80.161	75.00	91.13	53.47	87.65
30	98.98	78.731	81.40	85.58	58.47	85.96
31	97.98	79.270	89.33	83.13	57.47	87.28
32	98.71	79.756	79.50	82.13	56.47	87.59
33	99.49	80.281	78.50	81.13	55.47	83.23
34	98.49	80.650	77.50	80.13	51.47	74.85
35	97.49	81.260	69.55	79.13	53.47	67.29
36	94.77	79.415	68.55	78.13	52.47	60.19
37	92.12	77.778	61.92	77.13	51.47	55.93
38	89.55	76.679	60.92	76.13	50.47	57.49
39	84.20	74.388	55.31	75.13	49.47	61.78
40	76.89	72.726	54.31	68.43	47.83	60.08
41	78.59	74.940	49.50	60.88	46.29	59.04
42	69.58	75.271	48.50	53.83	44.64	61.13
43	68.58	75.308	44.33	52.83	43.64	59.01
44	67.18	73.434	43.33	51.83	42.64	52.59
45	67.53	74.777	42.33	50.83	41.64	51.87
46	67.49	73.759	41.33	49.83	40.64	52.08
47	68.63	73.953	40.33	48.83	39.64	49.64
48	71.76	71.597	36.88	47.83	38.64	46.90
49	73.08	65.637	35.88	44.18	37.04	42.87
50	74.53	62.888	34.88	38.59	35.31	40.41
51	69.97	58.503	33.88	37.59	33.85	42.78
52	65.98	59.960	32.88	36.59	32.85	43.67
53	61.93	46.743	31.88	35.59	31.85	43.06
54	59.19	42.011	32.03	34.59	30.85	41.70
55	55.79	40.250	34.22	33.59	29.85	36.82
56	52.63	36.711	33.22	32.59	28.85	32.77
57	47.85	35.474	32.22	30.01	27.85	27.51
58	41.31	33.560	31.22	29.01	26.85	25.01
59	35.37	32.351	26.44	28.01	25.85	25.38
60	29.86	31.873	21.42	25.72	24.85	27.18
61	27.94	31.337	17.64	23.60	23.85	25.09
62	26.73	30.040	16.64	21.60	23.14	22.86
63	26.14	29.159	15.64	20.62	22.14	20.92
64	25.14	26.860	16.10	19.62	21.40	19.10
65	24.34	24.648	19.25	18.62	20.40	17.26
66	23.53	21.794	22.60	17.62	19.40	17.60
67	22.53	20.067	24.82	15.93	18.40	18.17
68	21.53	19.192	23.82	14.33	17.40	18.27
69	20.36	17.675	19.23	13.33	16.40	18.04
70	19.36	16.999	14.88	12.33	15.40	15.45
71	16.99	15.200	10.69	11.33	14.40	11.62
72	14.68	14.333	9.69	10.76	13.40	9.60
73	12.80	13.808	8.48	9.76	12.40	8.22
74	11.69	13.145	6.72	9.56	11.40	7.50
75	10.47	12.608	9.37	8.06	10.40	8.50
76	9.71	12.466	10.35	8.36	9.78	10.47
77	9.31	11.420	10.18	8.18	9.25	13.50
78	9.19	10.362	9.18	7.60	8.82	22.33
79	8.45	9.230	9.00	7.01	7.44	26.50
80	8.22	8.380	8.00	6.41	6.77	19.08
81	7.47	7.427	7.00	5.80	6.07	14.50
82	7.11	6.750	6.67	5.17	5.35	14.00
83	6.63	6.188	6.38	4.52	4.58	10.33
84	6.30	5.445	6.14	4.22	4.26	15.50
85	5.71	4.704	6.00	4.03	3.95	16.50
86	5.17	4.211	6.00	4.03	3.95	18.50
87	4.63	3.600	6.25	4.14	3.88	26.00
88	4.55	3.235	5.25	4.06	3.83	.....
89	4.64	2.956	5.67	3.72	3.40	.....
90	3.84	2.647	4.67	3.17	3.00	.....
91	3.50	2.624	3.67	2.89	2.29	.....
92	3.37	2.359	2.67	2.43	1.80	.....
93	3.86	2.177	2.30	1.67	1.33	.....
94	4.00	1.985	1.50	1.33	1.00	.....
95	4.29	1.880	1.00	1.00	1.33	.....

*Comparison of Curves representing different Tables of Mortality.*

In order that the effect of the foregoing comparison may be better seen, than in the form of a table, the several rates of mortality have been made to correspond with the different curved lines on the annexed engraving, in the following manner. The numbers written on the left hand, from the top to the bottom of the page, indicate the different years of age from birth to the extreme of life. The numbers across the top of the page, increasing from left to right, serve to show that number out of which one person died in the year following each age. The curves cut the horizontal lines, which mark the *ages*, in those perpendicular lines which fall from the *numbers* out of which one person died in the year following each age. So at age 41, the horizontal line, extending therefrom, is met by the curved line . . . . . in, or nearly in, that perpendicular line under the number 60; which signifies that, in the year following age 41, one person died out of every 60 persons living at that age.\*

While the general outline of the curve, representing the mortality among the members of Friendly Societies, was such as, with reference to the curves representing the other tables, seemed to offer satisfactory evidence that much reliance might be placed on its accuracy *in the main*, there were yet some apparent

\* Curves, showing the numbers out of which one person died in each year, were preferred to the ordinary method of drawing curves to correspond with the numbers *remaining alive* at the end of each year, out of a given number assumed to be living at the youngest age in the tables; for the reason, that, as the number of deaths at almost every age is small when compared with the numbers living at the respective ages, any slight increase or diminution of the number of deaths, in particular years, would be lost sight of, from that increase or diminution not influencing in any marked degree, the numbers remaining alive at the end of the years out of those who entered upon it. The case is very similar to that of applying a sensible and easily affected instrument of measurement in preference to one on which a like cause would produce an effect much less evident. In the method heretofore used, in drawing curves to represent mortality tables, different tables may correspond, *as to the rate of mortality*, through the greater part of their course; although (on the supposition of a common radix), from the rate of mortality at the earlier ages having differed, the curves, representing the tables, may have departed very widely from each other. It is true, mathematicians will know that, while parallel lines drawn through the curves at all the corresponding points are alike, the curves would, in fact, coincide with each other; but as the object, in drawing curves at all, is ocular comparison, it seems desirable to adopt that method which is most marked and self-evident in its development.





irregularities in its course, which will probably always appear in similar cases, if the number of things observed upon be not exceedingly great; it was therefore thought well to describe a more uniform curve through the uneven one, representing the Table at page 59; but with this restriction, that the mortality represented by the former, between certain ages up to age 70, should, in the aggregate, be the same, or nearly the same, as the aggregate of that indicated by the latter.\* This was accordingly done; and such adjusted curve is marked on the plate by the dotted line . . . . .; the following Table is made to agree with it.

A Table, showing the Number out of which one Person would die at each Age, deduced for ages over 19, from the experience of the English Friendly Societies.

Age.	One dying out of	Age.	One dying out of	Age.	One dying out of	Age.	One dying out of
13	165.6	28	95.4	43	55.3	57	30.8
14	158.3	29	92.1	44	53.4	58	29.3
15	151.7	30	88.9	45	51.6	59	27.9
16	145.6	31	85.8	46	49.9	60	26.6
17	140.0	32	82.8	47	48.3	61	25.3
18	134.8	33	79.8	48	46.6	62	24.1
19	129.9	34	76.9	49	44.8	63	22.9
20	125.3	35	74.1	50	42.9	64	21.7
21	121.0	36	71.4	51	41.1	65	20.6
22	116.9	37	68.8	52	39.3	66	19.5
23	113.0	38	66.3	53	37.6	67	18.4
24	109.3	39	63.9	54	35.9	68	17.3
25	105.7	40	61.6	55	34.1	69	16.3
26	102.2	41	59.4	56	32.4	70	15.4
27	98.8	42	57.3				

The observations on which the mortality represented by the curve \*\*\*\*\* was founded did not, as last combined, furnish any data for constructing a mortality table for ages under 20; but as it was desirable, for some of the purposes of Friendly Societies, that the table should embrace earlier ages, the curve was extended from age 20 upwards until it met, at age 13, the line indicating the Chester Mortality Table; and, in so extending it, regard was had to keeping it in that course of which the order of second differ-

\* Mr. Lubbock, in his observations of the tides, and Sir John W. Herschel, with reference to his observations of double stars, have adopted a similar course.

ences should be uniform, or very nearly so, with the second differences of the yearly rate of mortality represented by the adjusted curve for ages above 20.

At age 70 the Friendly Societies' mortality agreed, almost fractionally, with that indicated by the Northampton Table formed by Dr. Price, and the course of the curve corresponding with the latter, after that age, appeared to run so evenly into the adjusted curve of the Friendly Societies' experience, that no hesitation was felt in adopting the mortality of the Northampton Table for ages over 70. It was necessary to adopt other data for the mortality after this age, for the reason, that that obtained from the returns of the Friendly Societies then became, as is indicated in the curve representing it, so abruptly irregular, as to raise a presumption that some other cause must have given rise to it than so sudden a change in the actual rate of mortality. It will be hereafter seen that the same irregularity, after the age 70, is, by the data now published, shown to prevail in regard to the *sickness* as in the rate of mortality.

It is extremely probable, that the irregularity alluded to arises in the following manner. It is very usual for members of Friendly Societies to become entitled to a fixed superannuation allowance, without reference to sickness or health, from the time they attain the age of 70; and consequently there would be no motive for recording the times at which they might experience *sickness* after that age, even if it were *known* to the Society that the members were ill. In many societies, in which the rules do not provide for superannuation allowances to the members *after a fixed age*, such an allowance is made whenever the members become incapable, from infirmity, of following their ordinary avocations; and it may be presumed, that a large majority of persons, entitled to a superannuation allowance under such circumstances, would have a good claim to it at an age not far removed from 70: this would prevent any sickness occurring to *them* appearing in the records of the institutions to which they severally belonged. In either of the supposed cases the persons would be included in the returns furnished by the Societies under schedule A *as members*; although it would not be stated that they had been sick after the dates of their superannuation; for the reason that, from that time, sickness would not cause them to receive additional allowances. A practice moreover has occasionally prevailed, arising

most probably from the too frequent poverty of Friendly Societies, of offering to superannuated members a gross sum to induce them to retire, and exonerate the institution from all further claims upon it; a temptation to which the momentary wants of the members, in too many instances, induce them to yield, and so sacrifice their real interests. This, of course, exempts the Society from payment of the allowance at the member's death; by which means the deaths of the more aged members have never appeared in the Society's books. And as it is not universal, in the older societies, to guarantee a sum at death at all, the two causes just alluded to will sufficiently account for the apparent decrease in the mortality after age 70, as shown in the returns obtained by the Society for the Diffusion of Useful Knowledge, of which returns we are now treating.

*Mortality Table, formed from the experience of the  
Friendly Societies.*

Agreeing with the Table at page 65, the probability of a person living one year was computed for each age up to age 70, in the manner already pointed out at page 39; and from these probabilities the ordinary form of Mortality Table in page 69 was ultimately computed by the method explained at page 47; adopting, as has been just stated, the mortality shown by the Northampton Table for ages above 70. It may be remarked, in reference to the adoption of the Northampton Table for these ages, that, independently of its rate of mortality having agreed very closely for several years preceding age 70 with that deduced from the new data, which in itself was deemed a fact of considerable weight in directing the choice, it was found that the rate of mortality by the Northampton Table, for those higher ages, was very near to the mean of the four following Tables, viz.

The Government Male Annuitants,  
The Carlisle Table,  
The Chester Male Table, and  
The Sweden Male Table:

which tables were originally selected for the purposes of comparison, because they were deemed those of most authority.

The following statement will show how nearly the Northampton Table agrees with the mean spoken of.

Numbers out of which One Person will die.

Age.	According to the Northampton Table.	According to the mean of the four Tables mentioned.	Age.	According to the Northampton Table.	According to the mean of the four Tables mentioned.
70	15.40	15.72	83	5.25	5.93
71	14.40	13.43	84	4.88	5.54
72	13.40	12.22	85	4.54	5.13
73	12.40	11.23	86	4.26	4.85
74	11.40	10.63	87	3.96	4.66
75	10.40	10.33	88	3.95	4.27
76	9.78	10.22	89	3.88	4.25
77	9.25	9.77	90	3.83	3.58
78	8.85	9.06	91	3.40	3.17
79	8.22	8.42	92	3.00	2.76
80	7.44	7.73	93	2.29	2.55
81	6.77	6.92	94	1.80	2.21
82	6.07	6.43	95	1.33	2.04

From all the foregoing considerations, the new table is thought to represent the rate of mortality, *as it prevails among the labouring classes in England*, more nearly than any one that has heretofore been published, and it will therefore be very confidently adopted in the calculations given in a subsequent part of this work, which are intended to be applied for purposes having especial reference to the labouring classes of the community.



A Table of Mortality, deduced for Ages 20 to 70, from the experience of the English Friendly Societies, corresponding with the adjusted curve in plate No. 1, at page 70.

Age.	Living.	Dying.	Age.	Living.	Dying.
13	8669	52	55	4763	140
14	8617	54	56	4623	143
15	8563	56	57	4480	145
16	8507	58	58	4335	148
17	8449	60	59	4187	150
18	8389	62	60	4037	152
19	8327	64	61	3885	153
20	8263	66	62	3732	155
21	8197	68	63	3577	156
22	8129	70	64	3421	158
23	8059	71	65	3263	158
24	7988	73	66	3105	159
25	7915	75	67	2946	160
26	7840	77	68	2786	161
27	7763	79	69	2625	161
28	7684	81	70	2464	160
29	7603	83	71	2304	160
30	7520	85	72	2144	160
31	7435	87	73	1984	160
32	7348	89	74	1824	160
33	7259	91	75	1664	160
34	7168	93	76	1504	154
35	7075	95	77	1350	146
36	6980	98	78	1204	136
37	6882	100	79	1068	130
38	6782	102	80	938	126
39	6680	105	81	812	120
40	6575	107	82	692	114
41	6468	109	83	578	110
42	6359	111	84	468	96
43	6248	113	85	372	82
44	6135	115	86	290	68
45	6020	117	87	222	56
46	5903	118	88	166	42
47	5785	120	89	124	32
48	5665	122	90	92	24
49	5543	124	91	68	20
50	5419	126	92	48	16
51	5293	129	93	32	14
52	5164	131	94	18	10
53	5033	134	95	8	6
54	4899	136	96	2	2

*Curve representing Rate of Sickness.*

In plate No. 2, the line ——— is made to coincide with the mean quantity of sickness in the years following the several ages, from 20 to 70, as shown in the second column of the Table at page 59. The horizontal lines, agreeing with the numbers on the left of the plate, from top to bottom, indicate the several years of age. The numbers across the plate, from left to right,

signify weeks and parts of weeks. As an example, it may be mentioned, that the horizontal line corresponding to age 37 is cut by the plain line ——— a little more distant from the left hand than that perpendicular line under 1 week: this is intended to show, that at age 37 the mean quantity of sickness experienced in the following year was, in a small degree, over 1 week: in the Table at page 59 it is 1.015 weeks. At age 53, the mean sickness is, by the same Table, 2.035 weeks, which is expressed in the plate by the plain line ——— meeting the horizontal line which would correspond to age 53, a little more distant from the left than the perpendicular line under 2 weeks.

For the same reason that the more even curve . . . . ., in plate No. 1, was drawn through the uneven one, which represents the *mortality* shown in the Table at page 59, it was thought well to describe, in plate No. 2, a more uniform curve through the line corresponding to the mean annual sickness expressed in the same table; in doing which care was taken that the total quantity of sickness indicated by the uniform or adjusted curve, as occurring between the ages 20 and 70 both inclusive, should agree *exactly* with the total quantity, within the limits of those ages, shown by the Table last mentioned; being in either case an aggregate of 124.062 weeks: so that the only change which has been made by the adjustment is a slight variation in the *distribution* of the sickness.

The following table corresponds with the adjusted curve marked .....

Age	Quantity of Sickness experienced by an Individual in the Year following each Age; expressed in Weeks and decimals of a Week.	Age.	Quantity of Sickness experienced by an Individual in the Year following each Age; expressed in Weeks and decimals of a Week.	Age.	Quantity of Sickness experienced by an Individual in the Year following each Age; expressed in Weeks and decimals of a Week.
20	.776	37	1.009	54	2.120
21	.780	38	1.040	55	2.256
22	.785	39	1.074	56	2.410
23	.791	40	1.111	57	2.586
24	.798	41	1.151	58	2.788
25	.806	42	1.195	59	3.021
26	.815	43	1.243	60	3.292
27	.825	44	1.295	61	3.611
28	.836	45	1.351	62	3.991
29	.848	46	1.411	63	4.448
30	.861	47	1.475	64	5.001
31	.876	48	1.544	65	5.672
32	.893	49	1.619	66	6.486
33	.912	50	1.701	67	7.471
34	.933	51	1.791	68	8.659
35	.956	52	1.890	69	10.086
36	.981	53	1.999	70	11.793

To face page 70

Weeks and decimals of a week

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100





*Comparison of Curves representing Rates of Sickness.*

A principal motive for laying down a curve to represent the mean annual rate of sickness was to afford an easy method of comparing it with the results of observations, made some years since, on the rate of sickness among Friendly Societies in Scotland; which results were published by the Highland Society in one of their Reports, and they are also given in the Report of the Select Committee of the House of Commons on the subject of Friendly Societies, ordered to be printed on the 5th of July, 1825.

The following is the table alluded to, as deduced from the experience of the Societies in Scotland.

Age.	Mean duration of Sickness experienced by an Individual in the Year following each Age; expressed in Weeks and decimals of a Week.	Age.	Mean duration of Sickness experienced by an Individual in the Year following each Age; expressed in Weeks and decimals of a Week.	Age.	Mean duration of Sickness experienced by an Individual in the Year following each Age; expressed in Weeks and decimals of a Week.
21	.575	38	.718	55	1.821
22	.576	39	.737	56	1.918
23	.578	40	.758	57	2.018
24	.581	41	.784	58	2.122
25	.585	42	.814	59	2.230
26	.590	43	.852	60	2.346
27	.596	44	.902	61	2.500
28	.603	45	.962	62	2.736
29	.611	46	1.032	63	3.100
30	.621	47	1.108	64	3.700
31	.631	48	1.186	65	4.400
32	.641	49	1.272	66	5.400
33	.652	50	1.361	67	6.600
34	.663	51	1.451	68	7.900
35	.675	52	1.541	69	9.300
36	.688	53	1.633	70	10.701
37	.702	54	1.726		

The line, marked ——— in the foregoing plate, coincides with the last-mentioned table, and the close agreement as to the *relative* rate of sickness, at all the ages embraced in the term compared, is a fact strongly tending to establish the credit of both Tables; although the *actual* quantity of sickness shown in the Scotch Table is very considerably less than the actual quantity experienced among the English Societies; which circumstance would necessarily render computations based on the former quite inapplicable to the purposes of Societies in England.

The following statement shows the ratio of the mean annual sickness in the English Societies to the sickness in the Scotch Societies, for the several ages before compared.

Age.	Ratio of mean Annual Sickness in the English Societies to that in the Societies of Scotland, the latter being taken in each case as unity.	Age.	Ratio of mean Annual Sickness in the English Societies to that in the Societies of Scotland, the latter being taken in each case as unity.	Age.	Ratio of mean Annual Sickness in the English Societies to that in the Societies of Scotland, the latter being taken in each case as unity.
21	1.37913	38	1.55710	55	1.34157
22	1.44618	39	1.53324	56	1.27059
23	1.46886	40	1.53034	57	1.31764
24	1.39931	41	1.46173	58	1.29500
25	1.30256	42	1.42629	59	1.28206
26	1.25085	43	1.40258	60	1.34442
27	1.28523	44	1.40687	61	1.47800
28	1.27363	45	1.37942	62	1.55921
29	1.26841	46	1.33236	63	1.54355
30	1.33977	47	1.31408	64	1.39784
31	1.40254	48	1.30523	65	1.24955
32	1.38378	49	1.27123	66	1.12148
33	1.38344	50	1.28618	67	1.07894
34	1.40875	51	1.26602	68	1.08443
35	1.42815	52	1.23102	69	1.11097
36	1.47529	53	1.24617	70	1.09195
37	1.52279	54	1.31402		

In the sixth edition of Dr. Price's *Observations on Reverendary Payments*, edited by Mr. W. Morgan, Actuary to the Equitable Assurance Society, page 473, it is stated that certain tables there given were computed by Dr. Price at the request of a Committee of the House of Commons; and further, that it was Dr. Price's intention to have published them had he lived to complete that edition of his work. Mr. Morgan adds, "In order, therefore, to fulfil his intentions, as well as to preserve those valuable fruits of his labours from being lost, I have inserted them, together with his own explanations of their use and construction. The first table shows the weekly allowances during incapacities of labour produced by sickness or accidents, and the correspondent weekly contributions necessary to entitle persons to those allowances."\*

Then follows the "Supposition on which the Table is formed."

\* First, that in societies consisting of persons under 32 years

\* Since the above paragraph was written, death has terminated Mr. Morgan's long-continued and valuable labours as a man of science and of extensive practical knowledge.

of age, a 48th part of them will be always in a state of incapacitation by illness and accidents; and therefore entitled to allowances proportioned to their contributions. Various reasons, and particularly the experience of Friendly Clubs, determine me to believe, that the proportion of the sick to the well in such a society will not be so great as this, and, consequently, that a weekly allowance during sickness will be more than supported by weekly contributions not exceeding a 48th part of that allowance."

"Secondly, It is supposed, that from the age of 32 to 42 this proportion increases to one quarter more than a 48th part; from 43 to 51 to one half more; from 52 to 58 to three quarters more; and from 59 to 64 to double. The reason of assuming this rate of increase is, that the probability of the duration of human life decreases after 30 nearly in this manner, or so that a person of the age of 60 has but half the probability of living any given time that a person at 32 has, and consequently must be then doubly subject to the causes that produce sickness and mortality."

It is not very obvious in what sense the term "probability of living *any given time*" is intended to be understood. It does not agree with the term as generally used, and as it is used in page 479 of the same volume of Dr. Price's own work; inasmuch as the probability of living one year for instance, according to the Northampton Mortality, (the Table used by Dr. Price,) at age 32, is .98229, and at age 60 it is .95976, while the *quantity of sickness experienced at the latter age is distinctly said to be twice that experienced at the former age*. This increase in the sickness is very nearly in the inverse ratio of what is called the *expectation*, or mean *duration of life*, there is therefore sufficient reason to think that such was the term intended to be adopted; and that after age 32 the quantity of sickness was thought to increase with the age, *inversely as the expectation of life*. The expectation at age 32 is 27.24 years, and at age 60 it is 13.21 years. On this last supposition the table in the next page, showing the quantity of sickness experienced at all ages from 20 to 70, was computed; and the curve represented by the broken line - - - - in the last plate, is made to correspond therewith. It will immediately be seen how widely the assumption of Dr. Price differs from the facts as shown from actual observations; and the circumstance tends to show how little reliance is, in similar cases, to be placed on hypotheses, however ingenious those hypotheses may be.

Mean Annual Sickness as deduced from the hypothesis of Dr. Price.

Age.	Sickness in Weeks.	Age.	Sickness in Weeks.	Age.	Sickness in Weeks.
32	1.0887	45	1.4449	58	2.0956
33	1.1075	46	1.4809	59	2.1515
34	1.1315	47	1.5199	60	2.2448
35	1.1550	48	1.5606	61	2.3256
36	1.1784	49	1.6034	62	2.4147
37	1.2035	50	1.6482	63	2.5107
38	1.2290	51	1.6936	64	2.6593
39	1.2566	52	1.7421	65	2.7255
40	1.2848	53	1.7927	66	2.8454
41	1.3145	54	1.8464	67	2.9758
42	1.3453	55	1.9022	68	3.1213
43	1.3766	56	1.9637	69	3.2761
44	1.4099	57	2.0268	70	3.4482

In all the subsequent calculations which relate to allowances during sickness, the Table at page 70 has been used, from a belief that at present no similar data exist of equal authority; but it by no means follows, that our exertions should be lessened to add other observations to those already collected. Much remains to be done, particularly the obtaining correct data from which to determine the rate of sickness which prevails from age 70 to the end of life; and also the difference in the rate of sickness which takes place among the inhabitants of towns and persons living in agricultural districts, as well as among persons of unlike occupations, supposing such differences to exist: for which purposes the returns obtained are not sufficiently extensive.

### COMBINATION OF THE PRINCIPLES OF COMPUTATION AND DATA.

We will now proceed to show how the doctrine of interest of money and the doctrine of probability, as applied to the duration of life or the occurrence of death or of sickness, are combined in ascertaining the contributions which ought to be paid to provide for an annuity in old age, for a payment at death, and for an allowance during sickness.

#### *Value of a Life Annuity.*

It was demonstrated at page 36, that the money value of the expectation of an individual, as respects the happening of a particular event, is equal to the product of the probability that such



event will happen into the sum to be received should the event occur. If, however, that money value should be paid *immediately*, while the event on which the receipt of the contingent sum might depend would not be decided until some specific future time, the money value could in the interim be improved at interest, and such an amount only need be *immediately* paid, or set apart, as would, with its interest, increase to the actual money value by the time the contingent event had been determined. That is, the money value of the expectation might be *discounted* for the term to intervene between the payment of it and the final determination of the contingent event. This would be equally true if the contingent sum could not be received until the end of that specific future time, *although the contingent event should be sooner determined*. If the sum to be received be made  $= p$ :

the probability  $= \frac{m}{m+n}$  and the term  $= n$ : then the value of the

expectation in present money will be  $p \times (1+r)^{-n} \times \frac{m}{m+n}$

which will therefore be a general expression to represent similar values in present money. If we make  $p = 1l.$   $n = 1$  year, and the probability to be that of a person aged  $A$  living one year, the present value of the expectation of receiving the  $1l.$  will be

$= \left( (1+r)^{-1} \cdot \frac{l_{a+1}}{l_a} \right)$ , or  $(1+r)^{-1} \cdot q_{a,1}$ . In like manner the pre-

sent value of  $1l.$  to be received at the end of two years, provided the person aged  $A$  be then living, will be  $\dots (1+r)^{-2} \cdot q_{a,2}$ ;

$1l.$  to be received at the end of the third year will be equal to  $\dots (1+r)^{-3} \cdot q_{a,3}$ ;

and  $1l.$ , to be received at the end of the  $n^{\text{th}}$  year,  $(1+r)^{-n} \cdot q_{a,n}$ .

If  $A_n$  be the oldest life in the table of mortality used, and values similar to the above for all the years of life between  $A_1$  and  $A_n$  be indicated, we shall obtain a series, the sum of which will be the total present value of  $1l.$  to be received at the end of each year during the life of the person aged  $A$ : that is, we shall find the present value of an annuity of  $1l.$  during such life, or the number of years' purchase which it is worth. If we make  $A$  to express that annuity, we shall have the equation  $A = (1+r)^{-1} \cdot q_{a,1} + (1+r)^{-2} \cdot q_{a,2} + (1+r)^{-3} \cdot q_{a,3} \dots (1+r)^{-(n-1)} \cdot q_{a,(n-1)} + (1+r)^{-n} \cdot q_{a,n}$ .

Since  $q_{a,1}, q_{a,2}, q_{a,3}, q_{a,4}, \dots$  are respectively equal to  $\frac{l_{a+1}}{l_a}, \frac{l_{a+2}}{l_a},$

$\frac{l_{x+t}}{l_x}, \frac{l_{x+t+1}}{l_x}$ , the last mentioned equation may also be expressed in the following form,

$$A = (1+r)^{-1} \cdot \frac{l_{x+1}}{l_x} + (1+r)^{-2} \cdot \frac{l_{x+2}}{l_x} \dots (1+r)^{-n} \cdot \frac{l_{x+n}}{l_x}, \text{ or}$$

which is equivalent thereto,  $A = \frac{1}{l_x} \left[ (1+r)^{-1} \cdot l_{x+1} + (1+r)^{-2} \cdot l_{x+2} \right.$   
 $\left. \dots (1+r)^{-n} \cdot l_{x+n} \right]$

#### *Temporary and deferred Life Annuities.*

Let  $A_{t0}$  represent the sum of the first  $t$  terms in the last mentioned series, or the present value of an annuity on the life A payable for  $t$  years only: this is called a *Temporary Annuity*. Let  $A_{t\infty}$  represent the sum of all the terms in the same series after the first  $t$  terms, or the present value of an annuity for the life A to be entered on at the end of  $t$  years; which is called an annuity *deferred* for  $t$  years. Then it is evident, from the definition, that  $A_{t0} + A_{t\infty} = A$ .

#### *A Deferred Life Annuity.*

The present value of all the terms after the  $t^{\text{th}}$  term in the series in question, that is  $A_{t\infty} =$

$$\frac{1}{l_x} \cdot \left[ (1+r)^{-(t+1)} \cdot l_{x+t+1} + (1+r)^{-(t+2)} \cdot l_{x+t+2} \dots \&c., \right]$$

to the last age in the mortality table. This latter series is equal to

$$(1+r)^{-t} \cdot \frac{1}{l_x} \left[ (1+r)^{-1} \cdot l_{x+t+1} + (1+r)^{-2} \cdot l_{x+t+2} \dots \&c. \right]$$

If we multiply this value of  $A_{t\infty}$  by  $\frac{l_{x+t}}{l_{x+t}}$ , (a fraction expressing unity, and which will not therefore alter such value) we obtain the following equation:

$$A_{t\infty} = \left( \frac{(1+r)^{-t} \cdot l_{x+t}}{l_x} \right) \times \left( \frac{1}{l_{x+t}} \cdot [(1+r)^{-1} \cdot l_{x+t+1} + (1+r)^{-2} \cdot l_{x+t+2} \dots \&c.] \right) \text{ but the series}$$

$$\frac{1}{l_{x+t}} \cdot \left[ (1+r)^{-1} \cdot l_{x+t+1} + (1+r)^{-2} \cdot l_{x+t+2} \dots \&c. \right]$$

is identical with that which would be indicated by  $A_t$ , or the

value of an annuity on  $(A_t)$ , a life  $t$  years older than  $A$  while the first factor, or  $\frac{(1+r)^{-t} \cdot l_{t+t}}{l_a}$ , is equal to  $(1+r)^{-t} \cdot \frac{l_{t+t}}{l_a}$ , that is, the value of unity discounted for  $t$  years, multiplied by the probability that the life  $A$  will live  $t$  years. From hence we deduce the following rule: To find the present value of an annuity on a life aged  $A$  to be entered on at the end of  $t$  years, multiply the value of an annuity on a life aged  $A$ , by the product of unity discounted for  $t$  years, into the probability of a life aged  $A$  living  $t$  years.

If, therefore, we have a table showing the value of an annuity on a single life at every age, we can readily deduce therefrom the present value of  $(A_{t0})$  an annuity on a life of an assigned age deferred for any number of years.

#### *Temporary Annuity.*

By the definition in the last page it was seen that  $A_{t0} + A_{t0} = A$ ; consequently  $A_{t0} = A - A_{t0}$ . Therefore the *present value of a temporary annuity for the term  $t$* , or an annuity on the life  $A$  payable for  $t$  years only, is equal to the difference between the value of an immediate annuity on the life aged  $A$ , and an annuity on the same life deferred for  $t$  years.

#### *Practical Method of computing a Life Annuity Table.*

If  $t$  be equal to one year, then we shall have

$A_{t0} = (1+r)^{-1} \cdot \frac{l_{t+1}}{l_a} \times A$ , for the present value of an annuity of 1*l.* on the life  $A$  deferred *one* year. The present value of  $A_{t0}$ , that is of a temporary annuity for *one* year on the life  $A$ , is the present value of the first term only, in the series represented by  $A$ , as shown at page 75: so that  $A_{t0} = (1+r)^{-1} \cdot \frac{l_{t+1}}{l_a} \times 1$ ; but  $A_{t0} + A_{t0} = A$ ; and substituting for  $A_{t0}$  and  $A_{t0}$  the above values of  $A_{t0}$  and  $A_{t0}$ , the following equation is obtained,  
 $A = \left( (1+r)^{-1} \cdot \frac{l_{t+1}}{l_a} \times 1 \right) + \left( (1+r)^{-1} \cdot \frac{l_{t+1}}{l_a} \cdot A \right)$  which is equal to  $\left( (1+r)^{-1} \cdot \frac{l_{t+1}}{l_a} \right) \times (1 + A)$ : from hence we deduce this conclusion, that, having the value of  $A$ , an annuity on a life one year older than  $A$ , we readily find the value of  $A$  by the following rule.

*Multiply the value of an annuity on a life aged  $A$ , increased*

by unity, by the product of 11. discounted for one year into the probability of a life aged  $A$  living one year. If, without knowing the values of annuities on lives of the older ages, we desired to find the value of  $A$ , there is no means of summing the series representing it but by computing the separate value of each term in it, and adding them together; which labour was, with little amelioration, actually performed by the celebrated Euler in finding the value of an annuity for a life of each age from birth to the last age in the mortality table he used. It is however evident that, beginning with the highest age in the mortality table, and proceeding down from year to year, we can, by the last-mentioned rule, compute the values of annuities, for every year of life, with little more labour than that required to find the value of an annuity at the youngest age only. By this rule the tables of the values of annuities hereafter given have been calculated.

*Practical Method of computing the Values of a  
Deferred Annuity.*

Having  $A_{[0]}$  the present value of an annuity on the life  $A$  to be entered on at the end of  $t$  years, we shall, by substituting  $A_{-n}$  for  $A$ , and  $t+n$  for  $t$  and  $l_{-n}$  for  $l_a$ , have, for an annuity on the life  $n$  years younger than  $A$  deferred  $t+n$  years,

$A_{-n[t+n]} = (1+r)^{-(t+n)} \cdot \frac{l_{t+n}}{l_{-n}} \times A_t$ ; which will be readily seen is equal to

$\left( (1+r)^{-n} \cdot \frac{l_n}{l_{-n}} \right) \cdot \left( (1+r)^{-t} \cdot \frac{l_{t+n}}{l_n} \right) \times A_t$ ; but  $\left( (1+r)^{-t} \cdot \frac{l_{t+n}}{l_n} \right) \times A_t$  is equal to  $(A_{[0]})$  the present value of an annuity on the life  $A$  deferred for  $t$  years; consequently the present value of an annuity on the life  $A_{-n}$ , deferred  $t+n$  years, is equal to

$\left( (1+r)^{-n} \cdot \frac{l_n}{l_{-n}} \right) \times A_{[0]}$ ; that is, it is equal to an annuity on the life  $A$  deferred  $t$  years multiplied by the product of unity discounted for  $n$  years into the probability of the life  $A_{-n}$  living  $n$  years. If  $n$  be one year, then the following equation is obtained,

$A_{-1[t+1]} = \left( (1+r)^{-1} \cdot \frac{l_t}{l_{-1}} \right) \times A_{[0]}$ , so that, if we have found the value of  $A_{[0]}$ , we obtain the value of an annuity on a life, one year younger than  $A$ , deferred to the age  $(A_t)$   $t$  years older than  $A$ , by multiplying  $A_{[0]}$  by the product of unity discounted for one year

into the probability of the life one year younger than A living one year. This conclusion is of considerable importance, as, from the application thereof, the present values of annuities, at all younger ages, *to be entered on at a given older age*, may be ascertained by a simple operation in multiplication for each younger age. In order to do this by one multiplication, however, it is necessary that a preparatory table be made, showing, at each year of life, the present value of unity to be received at the end of one year *should a person of the respective ages live one year*.<sup>\*</sup> This preparatory table will much shorten the labour of computing the values of *immediate* annuities on single lives. A Table has been formed, taking interest of money at  $3\frac{1}{2}$ ,  $3\frac{3}{4}$ , and 4 per cent., to facilitate such computations should they be hereafter required, and is printed in a subsequent part of this work.

*Annuities payable more frequently than once in the Year.*

The values of annuities already spoken of suppose such annuities to be payable but once in each year. If an annuity be payable more frequently, the value of it will be increased. A person who receives an annuity, by equal instalments, half yearly, will, for two reasons, be placed in more favourable circumstances than he who receives an annuity yearly. In the first place, he receives the half of his annuity six months earlier, and so gains one-half year's interest on every moiety of his annuity. And further, he may live to receive a half year's annuity more than the person who receives an annuity only once in, and at the end of, each year. An annuity payable half yearly will therefore be of greater present value than one which is payable yearly. For similar reasons an annuity payable quarterly will be of greater value than that which is payable half yearly; and as the number of times at which an annuity may be payable in a year increases, so will the present value of it increase. The investigations requisite to determine, precisely and with explicitness, the differences in these values, would occupy some space, and, as they are to be found in most works written expressly on the subject of life-annuities, it is not deemed necessary to give them here.† It is thought sufficient

<sup>\*</sup> That, is the numerical value of  $(1+r)^{-1} \cdot q_{a,1}$  must be found for each year of life *from* which the annuity is to be deferred.

† See particularly Mr. J. Milne's *Treatise on Annuities and Assurances*, v. i., page 231, *et seq.*



annuity payable more often than once in each year, we must for  $A$  and  $A_{(n)}$  payable yearly, substitute the values of annuities on the same lives increased by the above mentioned quantities as the cases may apply.

The foregoing values are those of annuities of £1, but it will be readily perceived that an annuity of £2 must be of double the value of an annuity of £1, or that  $1:2::A:2A$ ; and if the annuity be of any other amount as £ $a$ , the value will be proportionally increased, so that as  $1:a::A:aA$ . If, therefore, we know the value of  $(A)$ , an annuity of £1; and we require the value of an annuity of £ $a$ , we must multiply by £ $a$ , the value of  $(A)$ , an annuity of £1; and the same would evidently be true, if for  $A$  we substitute either  $A_{(n)}$  or  $A_{(n)}$ .

### LIFE ASSURANCES\*.

The present value of £ $p$  to be received at the end of one year, provided a life, aged  $A$  years, be then *dead*, will be equal to £ $p$ , discounted for one year, multiplied by the probability of the life failing in the year, which probability was shown at page 39 to be  $\frac{l_a - l_{a+1}}{l_a}$ ; therefore the present value of the £ $p$  to be received at the end of one year, provided the life in question fail in that time, is  $= p(1+r)^{-1} \cdot \frac{l_a - l_{a+1}}{l_a}$ . (See page 75.) The present value of £ $p$  to be received if the life fail in the *second* year is  $.p \cdot (1+r)^{-2} \cdot \frac{l_{a+1} - l_{a+2}}{l_a}$ . The present value of the £ $p$ , to be received if the life fail in the *third* year is  $p \cdot (1+r)^{-3} \cdot \frac{l_{a+2} - l_{a+3}}{l_a}$ , and the present value of £ $p$  to be received if the life fail in the  $n^{\text{th}}$  year is  $p \cdot (1+r)^{-n} \cdot \frac{l_{a+(n-1)} - l_{a+n}}{l_a}$  and if  $p$  be unity, and we make  $P_a$  equal to the present value of £1, to be received at the end of the year in which the life  $A$  may fail, we obtain this equation

$$P_a = \frac{1}{l_a \cdot 1+r} \cdot \left[ l_a - l_{a+1} + \frac{l_{a+1} - l_{a+2}}{1+r} + \frac{l_{a+2} - l_{a+3}}{(1+r)^2} \dots \right]$$

\* This, it will be perceived, has reference to the providing for the funeral allowance, or the sum payable at the death of a member of a Friendly Society.

$$\left. \frac{l_{a+(n-1)} - l_{a+n}}{(1+r)^{n-1}} \right]$$

This series may be divided into the two following series, so that we should have

$$P_s = \frac{1}{l_a \cdot (1+r)} \cdot \left[ l_a + \frac{l_{a+1}}{1+r} + \frac{l_{a+2}}{(1+r)^2} + \dots + \frac{l_{a+(n-1)}}{(1+r)^{n-1}} \right] - \frac{1}{l_a} \cdot \left[ \frac{l_{a+1}}{1+r} + \frac{l_{a+2}}{(1+r)^2} + \frac{l_{a+3}}{(1+r)^3} + \dots + \frac{l_{a+n}}{(1+r)^n} \right]$$

the first series is equal to  $\frac{1}{1+r} \cdot (1+A)$  or  $\frac{1+A}{1+r}$ , and the second is equal to  $A$ , or the value of an annuity of £1 on the life

A, as shown at page 76. Therefore, we have  $P_s = \frac{1+A}{1+r} - A$

$= \frac{1-rA}{1+r}$ , for the total present value of £1 to be received

at the end of the year in which the life A may fail, and as

$1 : p :: \frac{1-rA}{1+r} : p \cdot \frac{1-rA}{1+r}$ ; which last quantity is, there-

fore, the value of £p, to be received at the end of the year in which the life A may fail.

*Whence we deduce the following rule. To find the present value of an assurance of a given sum, to be received at the end of the year in which an assigned life may fail. First multiply the value of an annuity on such life by the rate of interest, and subtract the product from unity; then divide the remainder by the amount of £1 in one year, and the quotient will be the value of an assurance of £1 on the assigned life. Multiply this last value by the given sum, and the product will be the present value sought. In this manner, the single premiums in tables Nos. XXII. and XXIII. were computed from the table of annuities, No. VII.*

When persons assure sums payable at their deaths, they do not often pay down the total present value of such sums at once, which would be termed paying a *single present premium*;\* but they engage to pay, at stated periods, (annually in general,) such an annuity, called an *annual premium*, as may be equal, in present value, to the present value of the sums payable at their deaths. That which is termed the present value of an annuity is, as

\* Represented by *P* in the last investigation.



has been already seen, the present worth of a given payment to be made at the *end* of every year: but in paying, by annual premiums, the consideration for an assurance, it is general to pay one of such annual premiums at the *commencement* of the first year in which the assurance may be made; so that if the annual premium were £1, the present worth of it on the life of a person aged  $A$ , would be  $1 + A$ ; that is, it would be the value of an annuity on such life *increased by unity*; because the present value of the payment of £1 at the *end* of every year that the life  $A$  might live, has been shown, at page 76, to be represented  $A$ ; and as the £1 to be paid, at the *beginning* of the first year, would be *sure* to be received, and would be unaffected by discount or probability, its value would of course be just £1; thus making the total value of an annual premium of £1 to be  $1 + A$  as was before stated. If we make  $p_a$  to represent that annual premium, equivalent to a present premium  $P_a$ , we shall have this equation  $p_a \cdot (1 + A) = P_a$ , that is, the annual premium  $p_a$  must be such a sum as being multiplied by  $1 + A$ , will be equal to  $P_a$ , therefore  $p_a = \frac{P_a}{1 + A}$ .

If we desire to find what annual premium is equal to the present value of any other single present premium, the same reasoning is applicable. If we wish to ascertain what annual premium ought to be paid, during life, in lieu of ( $A_{(t)}$ ) the present value of an annuity to commence at the end of  $t$  years, we shall have the equation  $p_a \cdot (1 + A) = A_{(t)}$ , and consequently  $p_a = \frac{A_{(t)}}{1 + A}$ . If, however, the annual premium be to be paid only until the annuity should commence, or be entered upon, we should then, for  $1 + A$ , substitute the present value of the annuity payable during the term  $t$  only, increased by unity, that is  $1 + A_{(t)}$ ; and the equation obtained would be  $p_a \cdot [1 + A_{(t)}] = A_{(t)}$  and  $p_a = \frac{A_{(t)}}{1 + A_{(t)}}$ .

If it be intended that the premiums should be payable  $m$  times in each year, we must for  $1 + A$  substitute the value of an annuity, on the same life, payable  $m$  times in each year, *increased by the  $m^{\text{th}}$  part of a year's purchase*;\* because as the value of an an-

\* For the method of finding the values of annuities payable more frequently than once in a year, see page 79.

nunity payable  $m$  times in a year supposes the first payment of the  $m^{\text{th}}$  part of the annuity to be made at the *end* of the  $m^{\text{th}}$  part of a year from its commencement, while the  $m^{\text{th}}$  part of the year's *premium* would be paid at the *commencement* of the assurance, the real value of the annuity or premium, that the person assuring would contract to pay, would be  $\frac{1}{m} + A_m$ , where  $A_m$  is put for an annuity payable  $m$  times in a year,

The quantity  $\frac{1}{m}$  would, if the annuity were

payable half yearly, be	=	· 5000
if payable quarterly, it would be	=	· 2500
if payable monthly, „	=	· 0833
if payable weekly, „	=	· 0192
if payable daily, „	=	· 0027
if payable momentarily, „	=	· 0000

*Application of the Doctrine of Interest and of Probability to the Occurrence of Sickness.*

It was seen at page 75 that  $p(1+r)^{-n} \cdot \frac{m}{m+n}$  is a general expression by which to represent, in *present money*, the value of a contingent sum. If we make

$p = £1$   
 $(1+r)^{-n} = £1$  discounted for 0, 1, 2, 3, . . . . &c. days, and

$\frac{m}{m+n} = \frac{e_a}{365 l_a}$  the probability, at the beginning of a year,

that an individual will be alive and be sick on any one day of the year following age  $A$ , as shown at page 44; then the present value of £1 to be received on the first day of the year, provided an individual of the age  $A$  be sick, is

$1 \cdot \frac{e_a}{365 l_a} = \frac{e_a}{365 l_a}$  This value is unaffected by discount; because the money value of the contingency is presumed to be paid *on the same day* as that on which the contingent event will be determined, and no period less than one day is recognized in computing interest of money.\*

\* This will also appear from the consideration, that when no portion of time, giving rise to interest of money, intervenes between the payment of the money value of a contingency, and the determination of the contingent event; then  $n$ , in the expression  $(1+r)^{-n}$ , becomes zero, and  $(1+r)^{-n}$  is equal to unity.

The present value, *at the beginning of the year*, of £ 1, (or unity,) to be received on the 2nd day of that year, should the individual be alive, and be sick, is

$$1 \cdot \frac{e_a}{365 l_a} \cdot \frac{1}{1 + \frac{r}{365}} = \frac{e_a}{365 l_a} \cdot \frac{1}{1 + \frac{r}{365}}$$

The present value of the like sum to be received

$$\text{on the 3rd day} = \frac{e_a}{365 l_a} \cdot \frac{1}{1 + \frac{2r}{365}}$$

$$\text{on the 4th day} = \frac{e_a}{365 l_a} \cdot \frac{1}{1 + \frac{3r}{365}}$$

$$\vdots \quad \vdots \quad \vdots \quad \vdots \quad \vdots \quad \vdots$$

$$\text{on the 364th day} = \frac{e_a}{365 l_a} \cdot \frac{1}{1 + \frac{363r}{365}}$$

$$\text{and on the last or 365th day} = \frac{e_a}{365} \cdot \frac{1}{1 + \frac{364r}{365}}$$

The sum of these values for each of the 365 days in the year is equal to the product of  $\frac{e_a}{365 l_a}$  into the series expressed by

$$1 + \frac{1}{1 + \frac{r}{365}} + \frac{1}{1 + \frac{2r}{365}} + \frac{1}{1 + \frac{3r}{365}} \dots \frac{1}{1 + \frac{363r}{365}} + \frac{1}{1 + \frac{364r}{365}}$$

the sum of which series differs only by a very minute fraction from  $\frac{365}{1 + \frac{r}{2}}$ . So that, *at the beginning of the year*, the present value

of £ 1, to be received on *each* day of the year following the age A, should an individual be alive and be sick, will be

$$\frac{e_a}{365 l_a} \times \frac{365}{1 + \frac{r}{2}} \text{ or } \frac{1}{1 + \frac{r}{2}} \times \frac{e_a}{l_a} : \text{ which is the same as dis-}$$

counting, for half a year, so many pounds as are equivalent to the units contained in the sum of the probabilities, that an individual will be alive and sick on *each* of the 365 days in the year mentioned.\*

\* This, it will readily suggest itself, must be near the truth, from the consideration that the present value spoken of will be equal, or nearly equal, to the sum of the daily

At page 45 it was demonstrated that  $\frac{e_a}{l_a}$  represented the mean quantity of sickness experienced by an individual in one year, as well as the sum of the probabilities, at the beginning of the year, of his being alive and sick on each day in that year; and we have just seen that the present value of the probabilities of receiving £1 on each day of sickness in the year is the same, or nearly the same, as the units contained in the mean quantity of sickness experienced by an individual, discounted for half a year. If, therefore, the daily allowance in sickness were made £  $\frac{1}{7}$ , in-

stead of £1, we should have £  $\frac{1}{7} \times \frac{e_a}{l_a} \times \frac{1}{1 + \frac{r}{2}}$  equal to the present value of the several daily probabilities of sickness, for the year in question, and that would be the present value of a daily allowance in sickness after the rate of £1 per week. If therefore in place of  $\frac{e_a}{l_a}$  representing the mean quantity of sickness for the year, in the denomination of a day, it were made to express the mean quantity in the denomination of a week, then £  $\frac{e_a}{l_a}$  discounted for half a year, would be the present value of a daily allowance in sickness, after the rate of £1 for a week; and as it was before stated to be universal in Friendly Societies, to regulate the allowances in sickness by the sum allowed for one week, it will be convenient to adopt a week as the unit by which to measure the mean quantity of sickness, as well as the corresponding allowance in sickness; although the claim to such allowance does in fact arise daily.

Let us put  $e_a$  for the value, at age A, of a daily allowance in sickness, during the following year, after the rate of £1 per week,  $e_{a+1}$  for the like value, at the beginning of the year corresponding with the age one year older than A;  $e_{a+2}$  for the like value at the beginning of the year corresponding with the age two years older than A; and  $e_{a+n}$  for the like value, at the beginning of the year corresponding with the age n years older than A.

probabilities  $\left( \frac{e_a}{l_a} \right)$  discounted for half the year, over the whole of which it is assumed that the quantity  $\frac{e_a}{l_a}$  is equally distributed.

Then if it be required to find the value, *at age A*, of a daily allowance to be made during sickness, for a given number of years, we must consider, first, what is the value of the allowance to be made during the year immediately following the age in question; which, we have already shown, is the quantity expressed by  $e_x$ . But the value, *at age A*, of  $e_{x+1}$ , that is the allowance to be made during the year following the age one year older than  $A$ , is lessened by two circumstances; in the first place  $e_{x+1}$  is the value *one year after the age A*, consequently the quantity  $e_{x+1}$  should, *if the value of it be paid at age A*, be discounted for one year, and its present value, *at age A*, would, from that cause, be reduced to  $e_{x+1} \cdot (1+r)^{-1}$ . Again it is not *certain* that the individual aged  $A$  will live to enter on the age one year older; so that the last-mentioned value must be further reduced in the ratio that the probability of the life  $A$  living one year bears to certainty; which it will be borne in mind is represented by  $\frac{l_{x+1}}{l_x}$ ; by this fraction, therefore, we must multiply  $e_{x+1} \cdot (1+r)^{-1}$ . This will make

the value, *at age A*, of  $e_{x+1}$   $\frac{l_{x+1}}{l_x} \cdot e_{x+1} \cdot (1+r)^{-1}$

for like reasons } *at age A*, of  $e_{x+2}$  will be  $\frac{l_{x+2}}{l_x} \cdot e_{x+2} \cdot (1+r)^{-2}$   
the value, }

the value, *at age A*, of  $e_{x+3}$  will be  $\frac{l_{x+3}}{l_x} \cdot e_{x+3} \cdot (1+r)^{-3}$

and the value, *at age A*, of  $e_{x+n}$  will be  $\frac{l_{x+n}}{l_x} \cdot e_{x+n} \cdot (1+r)^{-n}$

If we represent the sum of this series for  $n+1$  terms by  $E_n$ , we obtain this equation

$$E_n = e_x + \frac{l_{x+1}}{l_x} \cdot e_{x+1} \cdot (1+r)^{-1} + \frac{l_{x+2}}{l_x} \cdot e_{x+2} \cdot (1+r)^{-2} \\ + \frac{l_{x+3}}{l_x} \cdot e_{x+3} \cdot (1+r)^{-3} + \dots + \frac{l_{x+n}}{l_x} \cdot e_{x+n} \cdot (1+r)^{-n} \text{ or which is the same,} \\ E_n = \frac{1}{l_x} \left[ l_x \cdot e_x + l_{x+1} \cdot e_{x+1} \cdot (1+r)^{-1} + l_{x+2} \cdot e_{x+2} \cdot (1+r)^{-2} \right. \\ \left. + l_{x+3} \cdot e_{x+3} \cdot (1+r)^{-3} + \dots + l_{x+n} \cdot e_{x+n} \cdot (1+r)^{-n} \right]$$

Then will  $E_n$  represent the value, *at age A*, of a daily allowance to be made in sickness, until the age ( $A_{x+1}$ )  $n+1$  years older

than A, after the *rate* of £1 per week. The value at the age ( $A_1$ ) one year older than A, of a like allowance up to the age  $n+1$  years older than A, will be expressed by  $E_{n+1}$ ; the like value at the age ( $A_2$ ) two years older than A, will be  $E_{n+2}$ , and the same value at the age ( $A_n$ )  $n$  years older than A, will be  $E_{n+n}$ . This last value will consist of but one term, and be identical with  $e_{n+n}$ .

Let  $E_{n(t)}$  represent the sum of the first  $t$  terms in the series indicated by  $E_n$ , so that  $E_{n(t)}$  will be the value, *at age A*, of the daily allowance in sickness for  $t$  years only;  $t$  being understood, in this case, never to be greater than  $n$ .

And let  $E_{n(t)}$  represent the sum of all the terms, in the series  $E_n$ , after the first  $t$  terms. So that  $E_{n(t)}$  will be the value, *at age A*, of the daily allowance in sickness after the first  $t$  years. Then it is evident, from the definition, that  $E_{n(t)} + E_{n(t)} = E_n$ .

The value, at age A, of all the terms after the first  $t$  terms

or  $E_{n(t)} = \frac{1}{l_n} \cdot [l_{n+1} \cdot e_{n+1} \cdot (1+r)^{-1} + l_{n+(t+1)} \cdot e_{n+(t+1)} \cdot (1+r)^{-(t+1)} + l_{n+(t+2)} \cdot e_{n+(t+2)} \cdot (1+r)^{-(t+2)} + \dots + l_{n+n} \cdot e_{n+n} \cdot (1+r)^{-n}]$ , which is equal to  $\left[ (1+r)^{-t} \times \frac{1}{l_n} \right] \times [l_{n+t} \cdot e_{n+t} + l_{n+(t+1)} \cdot e_{n+(t+1)} \cdot (1+r)^{-1} + l_{n+(t+2)} \cdot e_{n+(t+2)} \cdot (1+r)^{-2} \dots \&c.]$

If we multiply this whole expression by  $\frac{l_{n+t}}{l_{n+t}}$  a fraction expressing unity, and which will not therefore alter the value of the quantity multiplied, we obtain the following equation:

$$E_{n(t)} = \left[ (1+r)^{-t} \cdot \frac{l_{n+t}}{l_n} \right] \times \left[ \frac{1}{l_{n+t}} (l_{n+t} \cdot e_{n+t} + l_{n+(t+1)} \cdot e_{n+(t+1)} \cdot (1+r)^{-1} + l_{n+(t+2)} \cdot e_{n+(t+2)} \cdot (1+r)^{-2} + \dots \&c.) \right];$$

but the series in this expression, that between the last brackets  $[\dots]$ , is identical with the series indicated by  $E_{n+t}$ , and is the value, *at the age  $t$  years older than A*, of a daily allowance in sickness to the age  $n+1$  years older than A, and the first factor  $\left[ (1+r)^{-t} \times \frac{l_{n+t}}{l_n} \right]$  is equal to unity discounted for  $t$  years, multiplied by the probability that a life aged A will live  $t$  years. From the foregoing theorem we deduce this rule:

To find the value, at age  $A$ , of a daily allowance in sickness until the age  $n+1$  years older than  $A$ , to be entered on at the end of  $t$  years, multiply the value, at the age  $t$  years older than  $A$ , of a daily allowance in sickness from that age until the age  $n+1$  years older than  $A$ , that is  $E_{n+1}$ , by the product of unity discounted for  $t$  years into the probability of the life  $A$  living  $t$  years.

These conclusions will be true whether the age  $t+1$  years older than  $A$  be the oldest age in the mortality table used or not.

If therefore we have computed a table showing the values of  $E_n$ , a daily allowance in sickness up to age  $n+1$  years older than  $A$ , for the several years of age to the age  $n$  years older than  $A$ , we can deduce therefrom the value, at age  $A$ , of the like allowance in sickness to commence from the age  $t$  years older than  $A$ , up to the age  $n+1$  years older than  $A$ ; and  $t$  may be taken for any number not greater than  $n$ .

By the definition it was seen that  $E_{n(t)} + E_{n(t)} = E_n$ ; therefore,  $E_{n(t)} = E_n - E_{n(t)}$ ; therefore the value, at age  $A$ , of a daily allowance in sickness up to the age  $t$  years older than  $A$ , is equal to the total value, at age  $A$ , of a like allowance up to the age  $n+1$  years older than  $A$  less the value, at age  $A$ , of a like allowance from the age  $t$  years older than  $A$ , up to the age  $n+1$  years older than  $A$ .

If we make  $t$ , in the last given theorems, equal to one year we shall have this equation  $E_{n(1)} = (1+r)^{-1} \cdot \frac{l_{n+1}}{l_n} \cdot E_{n+1}$ , for the value, at age  $A$ , of a daily allowance in sickness to the age  $n+1$  years older than  $A$ , to be entered on at the end of one year. The value at age  $A$  of  $E_{n(1)}$ , is the same as  $e_n$ , which is the value of the first term in the series represented by  $E_n$ , as will be seen at page 87.

Still making  $t$  equal to one year, we shall have  $E_{n(1)} + E_{n(1)} = E_n$ ; and substituting  $e_n$  for  $E_{n(1)}$  and  $(1+r)^{-1} \cdot \frac{l_{n+1}}{l_n} \cdot E_{n+1}$  for  $E_{n(1)}$  we shall have

$E_n = e_n + \left[ (1+r)^{-1} \cdot \frac{l_{n+1}}{l_n} \cdot E_{n+1} \right]$ . So that if we know the value, at one year older than a given age, of a daily allowance in sickness from that older age up to any other age, we can compute the value of a like daily allowance, from the given age first mentioned, without the trouble of computing the value of each term in the series represented by  $E_n$ .

The following Rule corresponds with the last given theorem.

*Rule.*—To find the value, at a given age, of a daily allowance in sickness up to another specified age, multiply the value of a like allowance, at the age one year older than the age first mentioned, by the product of £1 discounted for a year, into the probability that a life of the age first mentioned will live a year; and to the last product add the value, at the given age, of the same daily allowance in sickness for the year immediately following it.

From what has been said, it will be evident that, beginning with the oldest age for which we desire to calculate the value of an allowance in sickness, and proceeding downwards from year to year, we can find the value in question for each of the several ages, down to the youngest age at which we are seeking it, with about the same quantity of labour that we could find the value at the youngest age only.

By this last rule the single premiums in Table No. XXV. were calculated.

### ANNUAL PREMIUMS.

Having the values, in a single present sum, at the different ages, of an allowance in sickness until the required older age, the annual premiums equivalent to such single present premiums, whether payable once or oftener in each year, are to be found in precisely the same manner as the annual premiums equivalent to any other single premium: viz. by dividing the present single premium by the value of an annuity payable during the whole life or until that age when it is desired the annual premiums shall cease. This subject was fully explained in pages 82 and 83, when treating of deferred annuities and assurances. As the relation of an annual premium to a single present premium is alike under all circumstances, it is not deemed necessary or useful to repeat the rules referred to.

It is believed that the principles, as well as the practical rules on which all the following tables are formed, have been so explained, that those who may desire to vary or extend them will find little difficulty in doing so. The tables are given rather as those which may be most frequently required, than as including all that may, for the different purposes of Friendly Societies, be, from time to time, found necessary. It is, however, hoped, that all the principles required to be introduced into Friendly Societies are developed in what has been already written, although all the applications of those principles have not been worked out.



## EXAMPLES.

It may be useful to give some examples in numbers, to show the manner of applying those of the foregoing theorems which may be most frequently called for in practice: and it is also thought well to give the rules for performing the respective operations in words at length.

1. To find the amount to which a given sum will increase, in a given number of years, at compound interest.

Theorem, p. 28.  $s = p \cdot (1+r)^n$

*Rule.*—Raise £1, or unity, increased by the *rate* of interest, to that power which is equal to the given number of years, and multiply the given sum by such power. The product will be the amount in the given number of years.

*Example.*—What will £100 amount to in 20 years, at a compound interest of 4 per cent.?

$(1.04)^{20} = 2.191123$  and  $2.191123 \times 100 = 219.1123$  or £219 2s. 3d. the answer.

2d. To find what present sum will, in a given number of years, increase, at compound interest, to a given amount.

Theorem, p. 29.  $p = \frac{s}{(1+r)^n}$

*Rule.*—Raise £1, or unity, increased by the *rate* of interest to that power which is equal to the given number of years, and divide the given amount by that power.

*Example.*—What present sum will, at a compound interest of 4 per cent., increase, in twenty years, to £219 2s. 3d.?

$$(1+r)^n = 2.19112 - \frac{219.112}{2.19112} = £100$$

3d. To find to what amount an annuity, or given sum payable at the end of every year, will increase in a given number of years.

Theorem, at p. 29.  $M = \frac{a}{r} \cdot [(1+r)^n - 1]$

*Rule.*—Raise £1, or unity, increased by the *rate* of interest, to that power which is equal to the given number of years. From such power subtract unity; then multiply the remainder by the given annuity, and divide the product by the rate of interest.

*Example.*—To what amount will an annuity certain of £50 increase, in 20 years, compound interest, 4 per cent.?

$(1.04)^{50} = 2.191123$ . From this subtract 1; the remainder  $1.191123 \times 50 \div .04 = 1488.904$  or £1488 18s. 1d. the answer.

4th. To find the present value of an annuity certain payable for a given number of years.

$$\text{Theorem, p. 30. } V = \frac{a}{r} \cdot [1 - (1+r)^{-n}]$$

*Rule.*—Raise unity, increased by its rate of interest, to that power which is equal to the given number of years, and divide unity by such power; subtract the quotient from unity: then multiply the remainder by the given annuity, and divide the product by the rate of interest.

*Example.*—What is the present value of an annuity certain of £50 payable for 20 years?

$$(1.04)^{20} = 2.191123$$

$$1 - .456387 = .543613$$

$$\frac{1}{2.191123} = .456387$$

$$.543613 \times 50 = 27.18065$$

$$\frac{27.18065}{.04} = 679.516 \text{ or}$$

£679 10s. 4d. the answer.

5th. Having a table showing the value of an annuity on a single life of every year of age, to find the value, at an assigned age, of a life annuity to be entered on at the end of a given number of years.

$$\text{Theorem, at pp. 76 and 77. } A_{10} = \left[ (1+r)^{-t} \cdot \frac{l_{n+t}}{l_n} \right] A.$$

*Rule.*—Multiply the value of an annuity of £1 on a life, older, by the given number of years, than the assigned age, into the probability that a life of the younger age will live until the older age. Multiply this product by unity discounted for the given number of years. The last product multiplied by the stated annuity will give the answer required.

*Example.*—What is the value, at age 30, of a life annuity of £20, to be entered upon in 25 years, according to the Table of Annuities formed from the mortality experience of the Friendly Societies. Interest  $3\frac{1}{2}$  per cent.?

$A_t$  (in this case an annuity on a life aged 55) = 10.8778 (Table No. VII.)

$$\frac{l_{n+t}}{l_n} = \quad \quad \quad = \frac{238209}{376021} \text{ (Table No. VI.)}$$

$1+r)^{-n}$  . . . . . = .423147 (Table No. I.)

Then  $10.8778 \times \frac{238209}{376021} \times .423147 = 2.9160$ , (Table No.

XX.), and  $2.916 \times 20 = 58.320$ , or £58 6s. 5d. the answer.

6th. Having, as before, a table showing the value of an annuity on a single life of every year of age, to find the present value of a stated annuity on a life of an assigned age, to be received for a given number of years only, should the life so long continue in being.

Theorem, at p. 77.  $A_{(n)} = A - A_{[n]}$ .

*Rule.*—From the value of an annuity of £1, payable during the whole continuance of a life of the assigned age, subtract the value of an annuity on the same life, to be entered on at the end of the given number of years. The remainder, multiplied by the stated annuity, will give the answer required.

*Example.*—What is the present value of an annuity of £50, on a life aged 30, payable for 25 years, should the life so long continue, according to the Table of Annuities formed from the mortality experience of Friendly Societies. Interest  $3\frac{1}{2}$  per cent. ?  
 $A$  (in this case an annuity on a life aged 30) . . . = 16.9248  
 $A_{[n]}$  (in this case an annuity on the same life deferred 25 years) = 2.9160, by Case 5. Then  $16.9248 - 2.9160 = 14.0088$ , and  $14.0088 \times 20 = 280.176$ , or £280 3s. 6d. the answer.

7th. To find the present value of an annuity on a given life, payable half yearly. See pp. 79 and 80.

*Rule.*—To the present value of an annuity of £1 on the assigned life, payable yearly, add one quarter of a year's purchase (or .25), and multiply the sum by the given annuity.

*Example.*—What is the present value of an annuity of £20, payable half-yearly, during a life aged 30, according to the mortality experience of the Friendly Societies. Interest  $3\frac{1}{2}$  per cent. ?

The value of an annuity, payable yearly, during a life aged 30 = 16.9248 (Table No. VII.) Then  $16.9248 + .2500 = 17.1748$ , and  $17.1748 \times 20 = 343.496$ , or £343 9s. 11d. the answer.

8th. To find the present value of an annuity on an assigned life, payable quarterly.

*Rule.*—To the present value of an annuity of £1 on the assigned life, payable yearly, add  $\frac{3}{4}$ ths of a year's purchase (or .375), and multiply the sum by the given annuity.

*Example.*—What is the present value of an annuity of £20,

*payable quarterly*, during a life aged 30. Same Mortality Table and interest as in the last example. The value of an annuity, *payable yearly*, during a life aged 30, is, as before, 16,9248. Then  $16.9248 + .3750 = 17.2998$ , and  $17.2998 \times 20 = 345.996$ , or £345 19s. 11d. the answer.

From the last two examples and reference to p. 80, the method of finding the value of an annuity, payable at other intervals in a year than half-yearly or quarterly, will be obvious.

9th. To find the value at an assigned age of an annuity, *payable half-yearly*, and to be entered on at the end of a given number of years.

*Rule.*—Multiply the value of an annuity of £1 on a life, older by the given number of years than the assigned age, and *payable half-yearly*, by the probability that a life of the younger age will live until the older age. Multiply the result by unity, discounted for the given number of years, the last product multiplied by the stated annuity will give the answer required.

*Example.*—What is the value, at age 30, of an annuity of £20, *payable half-yearly*, to be entered on in 25 years, according to the mortality experience of the Friendly Societies. Interest  $3\frac{1}{2}$  per cent.?

The value of an annuity, *payable half-yearly*, on a life 25 years older than age 30 (or at age 55) is, by Case 7, 10.8778 + .2500 = 11.1278. The probability that a life aged 30 will live to the age 55 =  $\frac{238209}{376021}$ . See Case 5. £1 discounted for 25

years = .423147. See the same Case. Then  $11.1278 \times \frac{238209}{376021} \times .423147 = 2.9830$ , and  $2.9830 \times 20 = 59.6600$ , or £59 13s. 2d. the answer.

10th. To find the present value of an annuity, *payable half-yearly*, on a life of an assigned age, to be received for a given number of years only, should the life so long continue.

*Rule.*—From the present value of an annuity of £1, *payable half-yearly*, during the *whole continuance* of a life of the assigned age, subtract the value of an annuity on the same life, *payable half-yearly*, to be entered on at the end of the given number of years. The remainder multiplied by the stated annuity will give the answer required.

*Example.*—What is the present value of an annuity of £20, payable half-yearly, on a life aged 30 for 25 years, should the life so long continue? Same Mortality Table and interest as before.

The present value of an annuity of £1 during a life aged 30, payable half-yearly, is by Case 7 = 17.1748. The value, at age 30, of a half-yearly annuity on that life, to be entered on at the end of 25 years, is by Case 9 = 2.9830. Then  $17.1748 - 2.9830 = 14.1918$ , and  $14.1918 \times 20 = 283.836$ , or £283 16s. 9d. the answer.

11th. To find the value, at an assigned age, of an annuity payable monthly, and to be entered on at the end of a given number of years.

*Rule.*—Proceed in all respects as in Case 9, substituting for an annuity payable half-yearly, an annuity payable monthly.

*Example.*—What is the value, at age 30, of an annuity of £20, payable monthly, to be entered on in 25 years? Same mortality and interest as before.

The value of a yearly annuity on a life 25 years older than age 30, (or at age 55,) is by Table No. VI., = 10.8778, to which add .4583. See p. 80. So that the value of an annuity, payable monthly, on a life aged 55, is 11.3361. The probability that a life, aged 30, will live 25 years, is  $\frac{238209}{376021}$ . See Case 5.

£1 discounted for 25 years, is = .423147. See Table No. I.

Then  $11.3361 \times \frac{238209}{376021} \times .423147 = 3.0388$ , and  $3.0388 \times 20 = 60.776$ , or £60 15s. 6d. the answer.

12th. To find the present value of an annuity, payable monthly, on a life of an assigned age, to be received for a given number of years only, should the life so long continue.

*Rule.*—Proceed in all respects, as in case No. 10, substituting, for a half yearly annuity, an annuity payable monthly.

*Example.*—What is the value, at age 30, of an annuity of £20, payable monthly, to continue for 25 years only, should the person aged 30 so long live? Mortality Table and interest as before. The value, at age 30, of an annuity of £1, payable monthly, during life, is = 16.9248 + .4583 or 17.3831. The value, at age 30, of an annuity payable monthly, on that life, to be entered on at the end of 25 years is, by case 11, = 3.0388.

Then  $17.3831 - 3.0388 = 14.3443$ , and  $14.3443 \times 20 = 286.886$  or £286 17s. 9d., the answer.

The last six cases will be sufficient to exemplify the method of finding the present value of either a temporary, or of a deferred annuity payable at other intervals of a year than those involved in the examples given.

13th. To find the present value of a given sum to be received at the end of the year, in which a life of an assigned age may fail.

$$\text{Theorem, p. 82. } P_a = \frac{1 - rA}{1 + r}.$$

*Rule.*—Multiply the value of an annuity of £1 on a life of the assigned age, by the rate of interest, and subtract the product from unity. Then divide the remainder by the amount of £1 in one year, and the quotient will be the present value of an assurance of £1 on the assigned life; multiply this last value by the given sum, and the product will be the present value sought.

*Example.*—What is the value, at age 30, of £100 to be received at the end of the year in which that life may fail? Mortality and interest as before.

$A$ , (in this case the value of an annuity of £1 on a life aged 30,) is by Table VII.  $\quad \quad \quad = 16.9248$   
 $r$  (the rate of interest)  $\quad \quad \quad = .035$   
 $1 + r$  (the amount of £1 in one year)  $\quad \quad = 1.035$   
 Then  $1 - \frac{(16.9248 \times .035)}{1.035} = .393874$ , and  $.393874 \times 100$

$= 39.3847$ , or £39 7s. 9d. the answer.

14th. To find the annual premium to be paid, at the beginning of every year, for the assurance of a given sum on an assigned life.

$$\text{Theorem, p. 83. } p_a = \frac{P_a}{1 + A}.$$

*Rule.*—Divide the present value of the assurance of £1, on the assigned life, by the value of an annuity of £1 on the same life increased by unity. Multiply the quotient by the given sum, and the product will be the annual premium required.

*Example.*—What annual premium should be paid, during the continuance of a life aged 30, for the assurance of £100 on that life. Mortality and interest as before.

$P_a$  (in this instance the present value of an assurance on a life aged 30, is by last case)  $= .393847$ .

$1 + A$  (the present value of an annuity on the same life increased by unity) = 17.9248.

Then  $\frac{.393847}{17.9248} = .02197$  and  $.02197 \times 100 = 2.1970$ , or £2 3s. 11d., the answer.

15th. To find the annual premium, *payable half yearly*, by equal instalments, for the assurance of a given sum on an assigned life.

*Rule*—Proceed as in the last case, substituting, for an annuity *payable yearly* on the assigned life, increased by unity, an annuity *payable half yearly* increased by half unity. See page 80.

*Example*.—What annual premium should be paid, by equal instalments at the beginning of every *half year*, during the continuance of a life aged 30, for the assurance of £100 on that life? Mortality and interest as before.

The present value of an assurance of £1 on a life aged 30 is by case 13, = .393847.

The value of an annuity of £1, *payable half yearly* during that life, is, by case 7, = 17.1748, and the same increased by .5 = 17.6748. Then  $\frac{.393847}{17.6748} = .022283$ , and  $.022283 \times 100 = 2.2283$ , £2. 4s. 7d., the answer.

16th. To find the annual premium, *payable by equal monthly instalments*, for the assurance of a given sum on an assigned life.

*Rule*.—Proceed as in Case 14, substituting for an annuity *payable yearly* on the assigned life, increased by unity, an annuity *payable monthly*, increased by the twelfth part of a year's purchase (.0833).

*Example*.—What annual premium should be paid, by equal instalments at the beginning of every month, during the continuance of a life aged 30, for the assurance of £100 on that life: mortality and interest as before?

The present value of an assurance of £1 on a life aged 30, is, by Case 13, = .393847.

The present value of an annuity of £1, *payable monthly* during that life, is, as shown in Case 12, = 17.3831, and the same increased by .0833 = 17.4664. Then  $\frac{.393847}{17.4664} = .022549$ , and  $.022549 \times 100 = 2.2549$ , or £2. 5s. 1d., the answer.

17th. To find the annual premium to be paid by a person of an assigned age, *until a given older age*, in lieu of the single present value of an annuity payable yearly, and to be entered on at that older age.

*Rule.*—Divide the present value of an annuity of £1 on the assigned life, deferred for so many years as may be equal to the difference between the younger and older ages (Case 5th), by the present value of an annuity on the assigned life, *payable for the intervening term only*, increased by unity (Case 6th). Multiply the quotient by the given annuity; and the product will be the answer required.

*Example.*—What annual premium should be paid until age 55, by a person now aged 30, to secure a life annuity of £20, from the age 55, during life: mortality and interest as before?

The value, at age 30, of an annuity of £1 deferred for 25 years, is, by Case 5, = 2.9160; and the value, at age 30, of an annuity of £1 payable for 25 years only, is, by Case 6, = 1.4.0088. This latter value increased by unity is = 15.0088.

Then, by the rule,  $\frac{2.9160}{15.0088} = .1943$ , and  $.1943 \times 20 = 3.886$ , or £3. 17s. 9d., the answer.

18th. To find the annual premium to be paid *in equal monthly instalments* by a person of an assigned age, until a given older age; in lieu of the single present value of an annuity *payable monthly*, and to be entered upon at that older age.

*Rule.*—Divide the present value of an annuity of £1, *payable monthly* on the assigned life, and deferred for so many years as may be equal to the difference between the younger and older ages (Case 11), by the present value of an annuity of £1 on the assigned life, *payable monthly*, for the intervening term only (Case 12), increased by one-twelfth part of a year's purchase (.0833). Multiply the quotient by the given annuity, and the product will be the answer required.

*Example.*—What annual premium should be paid, *in equal monthly instalments*, until age 55, by a person now aged 30, to secure an annuity of £20, *payable monthly*, from the age 55 during life: mortality and interest as before?

The value, at age 30, of an annuity of £1, *payable monthly*, and deferred for 25 years, is, by Case 11, = 3.0388. And the



value, at age 30, of an annuity of £1, *payable monthly* for 25 years only, is, by Case 12, = 14.3443.

This latter value increased by .0833 = 14.4276. Then, by the rule,  $\frac{3.0388}{14.4276} = .2106$ , and  $.2106 \times 20 = 4.212$ , or £4 4s. 3d., the answer.

### SICKNESS.

19th. To find the value, at an assigned age, of a given *weekly allowance during sickness* from that assigned age up to age 70.

*Rule.*—Multiply the value of a daily allowance in sickness, after the rate of £1 per week, from the assigned age up to age 70, as shown in Table No. XXV., by the given weekly allowance; and the product will be the answer required.

*Example.*—What is the value, at age 30, of a weekly allowance of 8s. during sickness, from that age to 70, according to the experience of Friendly Societies: interest  $3\frac{1}{2}$  per cent.?

The value, at age 30, of a daily allowance, after the rate of £1 per week, during sickness, up to age 70, is, by Table No. XXV., = 27.296. Then  $27.296 \times .4$ , (the decimal expression for 8s.) = 10.9184, or about £10 18s. 4d. the answer.

20th. To find the value, at an assigned age, of a given weekly allowance during sickness, up to age 70; but not to be entered upon until a given older age; such older age being less than 70. (See p. 88.)

*Rule.*—Multiply the value, at the older age, of a sickness allowance of £1 per week up to age 70, by the value of £1 discounted for so many years as may be equal to the difference between the assigned age and given older age: multiply this product by the probability of a person of the assigned age living to that older age. This last product multiplied by the given weekly allowance, will give the answer required.

*Example.*—What is the value, at age 30, of an allowance in sickness up to the age 70, after the rate of 8s. per week, to be entered upon at age 55; according to rate of sickness experienced in the Friendly Societies: interest  $3\frac{1}{2}$  per cent.?

The value, at age 55, of a sickness allowance up to the age 70, after the rate of £1 per week, is, by Table No. XXV.,

= 38.4715. The present value of unity discounted for 25 years, at  $3\frac{1}{2}$  per cent., is .423147. The probability of a person, aged 30, living 25 years, is by Table No. VI., =  $\frac{238209}{376021}$

Then  $38.4715 \times .423147 \times \frac{238209}{376021} = 10.3128$ , and  $10.3128 \times .4$  (the decimal expression for 8s.) = 4.12512, or £4 2s. 6d., the answer.

21st. To find the value, at an assigned age, of a stated allowance during sickness, from that assigned age up to any given older age less than 70.

*Rule.*—From the value, at the assigned age, of an allowance of £1 per week during sickness up to age 70, deduct the value, at the assigned age, of a like allowance to be entered upon at the given older age, as found by the last rule. The difference multiplied by the stated weekly allowance will give the answer required.

*Example.*—What is the value, at age 30, of an allowance in sickness, after the rate of 8s. per week, from that age up to age 55: rate of sickness and interest as before?

The value, at age 30, of an allowance of £1 per week during sickness up to age 70, is, by Table No. XXV., = 27.2960.

The value, at age 30, of a like allowance to be entered upon at the end of 25 years, is, by the last rule and example, = 10.3128. Then  $27.2960 - 10.3128 = 16.9832$ , and  $16.9832 \times .4$  (8s.) = 6.7932, or £6 15s. 10d., the answer.

22nd. To find the annual premium, payable from an assigned age until age 70, equivalent to the value in a single payment, of a stated weekly allowance during sickness, from that assigned age, up to age 70.

*Rule.*—Divide the value, in a single payment, of an allowance of £1 per week during sickness, from the assigned age, up to age 70, (as shown in Table No. XXV.,) by the value of an annuity of £1, on a life of the assigned age, payable from that age to age 70, increased by unity. Multiply the quotient by the stated weekly allowance, and the product will be the answer required.

*Example.*—What annual premium should be paid by a person

aged 30, in lieu of the value, in a single payment, of an allowance during sickness of 8s. per week, up to age 70: rate of sickness and interest as before?

The value, at age 30, of an allowance of £1 per week during sickness, up to age 70, is, by Table No. XXV., = 27.2960.

The value, at age 30, of an annuity of £1 payable for 40 years (or up to age 70), is found by Case No. 5, and is = 16.3833\*.

This value increased by unity = 17.3833. Then  $\frac{27.2960}{17.3833}$   
= 1.5702, and  $1.5702 \times .4 = .62808$ , or 12s. 7d., the answer.

23rd. To find the annual premium, payable from an assigned age, until a given older age less than 70, for a stated allowance during sickness, to be entered upon at the given older age, and then to continue until age 70.

*Rule.*—Divide the value in a single payment, at the assigned age, of a weekly allowance of £1 in sickness, from the given older age until age 70, (Case 20,) by the value of an annuity of £1, payable from the assigned age up to the given older age, increased by unity. Multiply the quotient by the stated allowance in sickness, and the product will be the annual premium required.

*Example.*—What annual premium should be paid until age 55, by a person now aged 30, for an allowance of 8s. per week during sickness; to be entered upon at age 55, and then to continue until age 70: rate of sickness and interest as before?

The single value, at age 30, of a weekly allowance of £1 in sickness, to be entered upon at age 55, and to continue until age 70, is, by Case 20, = 10.3128.

The value, at age 30, of an annuity of £1, payable for 25 years only (or until age 55), is, by Case 6, = 14.0088. Then, by the

rule,  $\frac{10.3128}{14.0088} = .6871$ , and  $.6871 \times .4 = .27484$ , or 5s. 6d., the answer.

\* The value of an annuity of £1 on a life aged 70 = 6.5435. The value of unity discounted for 40 years = .252572. The probability of a life aged 30 living 40 years =  $\frac{123200}{376021}$ . Then  $6.5435 \times .252572 \times \frac{123200}{376021} = .5415$ , and  $16.9248 - .5415 = 16.3833$ ; which is the value, at age 30, of an annuity of £1, payable for 40 years only, should the life so long endure.

24th. To find the annual premium, payable from an assigned age, until a given older age less than 70, for a stated allowance during sickness, for the term only during which the annual premium may be payable.

*Rule.*—Divide the single value, at the assigned age, of an allowance of £1 per week during sickness, from that assigned age until the given older age, (Case 21,) by the value of an annuity of £1, payable for the same term, increased by unity. Multiply the quotient by the stated allowance during sickness, and the product will be the annual premium required.

*Example.*—What annual premium should be paid by a person aged 30, until age 55, for an allowance of 8s. per week during sickness; to continue until the payment of the last annual premium: rate of sickness and interest as before?

The value in a single payment, at age 30, of an allowance of £1 per week during sickness, from age 30 to age 55, is, by Case 21, = 6.7932. The value of an annuity of £1, payable for the same term, is, by Case 6, = 14.0088. This value increased by unity, is = 15.0088. Then  $\frac{6.7932}{15.0088} = .4526$ , and  $.4526 \times 4 = .18104$ , or 3s. 7d. the answer\*.

25th. To find the annual premium, *payable in equal monthly instalments*, from an assigned age to age 70, equivalent to the value in a single payment, of a stated weekly allowance during sickness from that assigned age up to age 70.

*Rule.*—Divide the value, in a single payment, of an allowance of £1 per week during sickness, from the assigned age up to age 70, as shown in Table No. XXV., by the value of an annuity of £1, on a life of the assigned age, *payable monthly*, from that age up to age 70, increased by (.0833) one-twelfth part of a year's purchase. Multiply the quotient by the stated weekly allowance, and the product will be the answer required.

\* It should not be lost sight of that this solution supposes one annual premium will be payable at the end of the term during which the person would have had the sickness allowance guaranteed to him; and that, as he could then receive no further benefit from the payment of the premium, he might possibly withhold it. But as it is presumed that most members of Friendly Societies assure either annuities to commence when the allowances in sickness cease, or payments at their deaths, the seeming objection would not in reality ever exist. However, the difficulty, if any, might be obviated effectually by substituting, in this computation, an annuity, *payable for one year less than the whole period over which the assurance is intended to extend*, for an annuity payable for the whole period in question.

*Example.*—What annual premium should be paid, in equal monthly instalments, by a person aged 30, in lieu of the value, in a single payment, of an allowance during sickness of 8s. per week up to age 70: rate of sickness and interest as before?

The value, at age 30, of an allowance of £1 per week during sickness up to age 70, is, by Table No. XXV., = 27.2960. The value, at age 30, of an annuity of £1, payable monthly, for 40 years (or up to age 70), is, by Case No. 12\*, = 16.8037. This value increased by (.0833), the twelfth part of a year's purchase, is = 16.8870. Then  $\frac{27.2960}{16.8870} = 1.6164$ , and  $1.6164 \times .4 = .64656$ , or 12s. 11d. the answer.

26th. To find the annual premium, payable by equal monthly instalments, from an assigned age, until a given older age less than 70, for a stated allowance during sickness, to be entered upon at the given older age, and then to continue until age 70.

*Rule.*—Divide the value, in a single payment, at the assigned age, of a weekly allowance of £1 in sickness from the given older age to age 70, (Case 20,) by the value of an annuity of £1, payable monthly from the assigned age to the given older age, increased by (.0833)  $\frac{1}{12}$ th of a year's purchase. Multiply the quotient by the stated allowance in sickness, and the product will be the annual premium required.

*Example.*—What annual premium should be paid, in equal monthly instalments, until age 55, by a person now aged 30, for an allowance of 8s. per week during sickness, to be entered upon at age 55 and to continue until age 70: rate of sickness and interest as before?

The single value, at age 30, of a weekly allowance of £1 in sickness, to be entered upon at age 55, and to continue until age 70, is, by Case 20, = 10.3128.

The value, at age 30, of an annuity of £1 payable monthly for 25 years (or until age 55), is, by Case 12, = 14.3443.

This last value, increased by (.0833) the twelfth part of a

\* The value of an annuity of £1, payable monthly, on a life aged 70 is = 6.5435 + .4583 = 7.0018. The value of unity discounted for 40 years, is, by Table No. I., = .252572. The probability of a person aged 30 living 40 years, is, by Table No. VI.  $\frac{123200}{376021}$ . Then  $7.0018 \times .252572 \times \frac{123200}{376021} = .5794 - 16.9248 + 4583 = 17.3831$  and  $17.3831 - .5794 = 16.8037$ , the value, at age 30, of an annuity of £1 payable monthly until age 70.—See Case 12, p. 95.

year's purchase, is = 14.4276. Then  $\frac{10.3128}{14.4276} = .7148$ , and  $.7148 \times .4 = .28592$ , or 5s. 8d. the answer.

27th. To find the annual premium, *payable by equal monthly instalments*, from an assigned age until a given older age less than 70, for a stated allowance during sickness for the term only during which the annual premium may be payable.

*Rule.*—Divide the single value, at the assigned age, of an allowance of £1 per week during sickness, from that age until the given older age, (Case 21,) by the value of an annuity of £1, *payable monthly*, for the same term increased by (.0833), the twelfth part of a year's purchase. Multiply the quotient by the stated allowance during sickness, and the product will be the annual premium required.

*Example.*—What annual premium should be paid, in *equal monthly instalments*, by a person aged 30, for an allowance of 8s. per week during sickness, to continue until the payment of the last monthly instalment of the annual premium: rate of sickness and interest as before?

The value, in a single payment, at age 30, of an allowance of £1 per week during sickness, from age 30 to age 55, is, by Case 21, = 6.7932. The value of an annuity of £1, *payable monthly*, for the same term, is, by Case 12, = 14.3443. This last value increased by (.0833), the  $\frac{1}{12}$ th part of a year's purchase, is = 14.4276. Then  $\frac{6.7932}{14.4276} = .4708$ , and  $.4708 \times .4 = 18832$ , or 3s. 9d. the answer.

It is thought that the twenty-seven foregoing rules, and the examples showing their application, together with the aid of the tables hereafter given, will enable any person, who may consider them with a moderate degree of attention, and who possesses a competent knowledge of common arithmetic, to determine the rates which members of Friendly Societies ought to pay to provide for the ordinary benefits contemplated by those societies; and also to vary the amounts of those benefits so as to meet the necessities, or to accommodate the contributions to the means of particular classes in the community.

It will be seen that many of the questions to which the before-mentioned twenty-seven rules apply, may be answered by a reference to the Tables hereafter given; but such questions were pur-

posely selected, as would serve both as examples to the several rules, and at the same time explain the methods by which the Tables were constructed.

### NECESSITY FOR FRIENDLY SOCIETIES REQUIRING SUFFICIENT CONTRIBUTIONS.

It is essential to press most earnestly on the consideration of all those, on whom it may hereafter devolve to apply the above rules to real cases, that the very first object to be obtained by Friendly Societies is *security*; and that it will always be more easy to return a *surplus* that may have been created by a wise caution in fixing a society's rates, than to provide for a *deficiency* caused either by the adoption of less sound principles, or by a course of unfavourable events, to which all institutions like Friendly Societies are exposed; especially when they do not consist of very large numbers of members.

While the data published in this Treatise as regards mortality and the occurrence of sickness are adhered to, except probably for the case of a payment at death, it is confidently trusted that, among moderately large numbers, reliance may be placed on the results deduced therefrom; and the remarks in the preceding paragraph will have reference more especially to the *rate of interest* which, in applying the rules given, it may be assumed that money will yield. At present the Commissioners of the National Debt will allow to Friendly Societies, founded after a certain date, an interest of £3 16s. 0½d. per cent. per annum on all their funds; and it is therefore believed that societies may fairly make their calculations on the presumption that they will realize an interest of 3½ or even 3¾ per cent. It is not possible to do in practice what is in the calculations assumed to be done, that is, to improve the contributions received from the very day of their being paid to the societies: it is prudent, therefore, always to adopt in calculations made for the guidance of Friendly Societies, a rate of interest a little below that which there may be even a fair prospect of obtaining. In a subsequent part of this work, four tables are given, with the several rates of contribution expressed in sterling money. These tables are all founded on the supposition that money will produce an annual interest of 3¾ per cent.; but it was thought requisite for the sake of security to make an addition of 15 per cent. to the rates for Table No. IV.

### CONTRIBUTIONS MUST BE VARIED WITH THE PARTICULAR CIRCUMSTANCES OF FRIENDLY SOCIETIES.

It must not, however, be lost sight of that there may be particular circumstances in which it would not be prudent to depend upon the rates of contribution given in the tables here alluded to. In very large and crowded manufacturing towns, such as Manchester for instance, there is reason to fear that the contributions for an allowance in sickness, and for a payment at death, ought to be much greater than those given in the tables. There are certain occupations, too, which are notoriously unhealthy, such as some branches of needle-making, mining operations, and several others. If Friendly Societies should be formed by men following such occupations, the contributions to be required from them ought very far to exceed those which men engaged in ordinary employments should pay. In the case of societies formed in large manufacturing towns, there is indeed one circumstance which in some measure compensates for the presumed greater quantity of sickness and mortality: it is the fact of there being a much greater number of members who desert the Friendly Societies, and forfeit their previous contributions, than desert societies formed in rural districts, where the population is less migratory, and where employment is not so liable to sudden fluctuation as in the former cases: so that, even should no addition be made to the given rates of contribution, evil is less likely to arise than would probably follow a want of due exertion in fixing contributions for those whose avocations are injurious to health. If the suggestion made in a following page should be favourably entertained by those in authority, it is hoped that data will be collected which may prove of the greatest use for determining the proper differences in the contributions to be adopted by societies whose circumstances may differ.

### CONTRIBUTIONS SHOULD DIFFER WITH THE AGES OF THE MEMBERS.

It has been common heretofore to charge members of Friendly Societies who might enter them, at ages often differing by 20 years, the same rates of contribution; but since the following tables, and the data on which they are founded, show very



plainly that for every benefit to which they refer the proper contribution varies with every year of age, the injustice of requiring men of different ages to pay a like rate must be manifest; and as little excuse can be hereafter urged for a continuance of so objectionable a practice, it will, in all probability, be at once abandoned, as being utterly at variance with that feeling of equity and benevolence to which all well-regulated Friendly Societies owe their origin and existence. The following instance may be sufficient to make the truth of this statement very evident.

A person aged 20 ought to pay for an allowance of 10s. per week during sickness until age 70, a monthly contribution of . . . . .	1s. 0 $\frac{3}{4}$ d.
For an annuity of £1 per month, to commence at age 70 . . . . .	4 $\frac{3}{4}$
And for a sum of £10 at his death . . . . .	3 $\frac{1}{2}$
<hr/>	
Total monthly contribution	1 9

A man aged 35 ought to pay for the like allowance in sickness, a monthly contribution of . . . . .	1s. 6 $\frac{3}{4}$ d.
For a like annuity after age 70 . . . . .	11 $\frac{1}{4}$
And for a like sum at death . . . . .	5 $\frac{1}{2}$
<hr/>	
Total monthly contribution	2 11 $\frac{1}{2}$

So that the latter ought to pay 1s. 2 $\frac{1}{2}$ d. per month more than the former, being a difference of £69. 7s. per cent. The above contributions suppose money to be improvable at an interest of 3 $\frac{1}{2}$  per cent. per annum. That the younger man should not be required so to increase his contribution as to make good a deficiency in that of the older man is obvious; yet in *most* Friendly Societies these two persons would be required to pay precisely the same rate of contribution.

### BED-LYING AND WALKING PAY.

In many Friendly Societies, it is the practice to make a different allowance to those members who may be affected with very severe sickness, and those who may suffer from lighter ailments. The allowance made under the first-mentioned circumstances

is termed *bed-lying pay*; and the allowance made during the lighter degree of illness is called *walking pay*. Bed-lying pay is not generally understood to apply to that state of sickness which actually requires that the person should be confined to his bed; but to that state which prevents his following any employment whatever; while walking pay is in many cases allowed to such persons as may be in a state of health which will not permit them to follow their ordinary avocations, if personal exertion be required in them; but will allow them to give orders to servants or others, or to keep their accounts, or perform other light duties.

The great difficulty of defining with clearness what might properly be esteemed a claim to the one kind of allowance or to the other, and the diversity of practice in different places, as well as the want of data from which to determine the probability of the occurrence of the one or of the other separately, have caused the distinction to be advisedly neglected in the following computations. Nevertheless, it is by no means intended to assert that it may not, under some circumstances, be desirable to make the distinction *in practice*; and should a smaller allowance be made by a society during periods of slight sickness, than that made in more confirmed illness, an advantage would of course thereby be gained by the institution. This advantage might very allowably be taken for the sake of adding somewhat to the stability of a society, and as a means of meeting any unforeseen loss.

#### REDUCED ALLOWANCE IN LONG SICKNESSES.

It is also common for the rules of Friendly Societies to provide that when a member shall have been sick for a given term, generally either three or six months, the allowance made to him shall thenceforward be greatly reduced, often by one half of its original amount; although the member's illness, and consequently his necessities, may be both unmitigated. A practice directly the contrary of the one mentioned would appear to be extremely rational; and by the operation of the prevailing rule a man is very often obliged to apply for parish relief, which is a moral calamity that it should be the first object of Friendly Societies to avert.

Indeed it can only be with the hope of successfully aiding the labouring classes to raise themselves and their characters above

a dependence on parochial charity, that the country can be called upon to sanction the many pecuniary advantages offered to Friendly Societies, in the facilities given for the investment of their monies ; in their exemption from stamp duties ; and in the other valuable privileges they enjoy. For these reasons alone, it is very strongly recommended that the objectionable practice mentioned should be discontinued ; and, so far as the means of judging exist, it is believed that those savings to Friendly Societies are comparatively small which are effected by reducing a member's allowance when his sickness may have continued three, or especially six months. After these remarks, it is almost needless to say that the tables in this work have been formed on the supposition that no reduction, such as that spoken of, is to be made.

Of the following Tables the greater number have been already referred to ; and the modes of constructing all have been explained. If, however, any should appear which have not been particularly adverted to, the headings of them will sufficiently point out their uses.

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TABLE I.

The present Value of £1. to be received at the end of any number of Years, not exceeding 100; discounting at the Rates of 2, 2½, 3, 3½, 4, 4½, 5, 6, 7, and 8 per Cent. Compound Interest.

Years.	2	2½	3	3½	4	4½	5	6	7	8
	perCent.	perCent.	perCent.	perCent.	perCent.	perCent.	perCent.	perCent.	perCent.	perCent.
1	.980392	.975609	.970874	.966184	.961538	.956938	.952381	.943396	.934579	.925926
2	.961168	.951814	.942596	.933511	.924556	.915730	.907029	.889996	.873438	.857338
3	.942322	.928599	.915142	.901943	.888996	.876297	.863838	.839619	.816297	.793832
4	.923845	.905950	.888487	.871442	.854804	.838561	.822702	.792094	.762895	.735029
5	.905731	.883854	.862609	.841973	.821927	.802451	.783526	.747258	.712986	.680583
6	.887971	.862297	.837484	.813501	.790315	.767896	.746215	.704961	.666342	.630169
7	.870560	.841265	.813092	.785991	.759914	.734828	.710681	.665057	.622749	.583490
8	.853490	.820746	.789409	.759412	.730690	.703185	.676839	.627412	.582009	.540268
9	.836755	.800728	.766417	.733731	.702587	.672904	.644609	.591898	.543933	.500249
10	.820348	.781198	.744094	.708919	.675564	.643928	.613913	.558395	.508349	.463193
11	.804263	.762145	.722421	.684946	.649581	.616199	.584679	.526788	.475092	.428882
12	.788493	.743556	.701380	.661783	.624597	.589664	.556833	.496969	.444012	.397113
13	.773032	.725420	.680951	.639404	.600574	.564272	.530321	.468839	.414964	.367698
14	.757873	.707727	.661118	.617782	.577475	.539973	.505068	.442301	.387817	.340461
15	.743015	.690463	.641862	.596891	.555265	.516720	.481017	.417265	.362446	.315241
16	.728446	.673625	.623167	.576706	.533908	.494469	.458112	.393646	.338734	.291890
17	.714162	.657195	.605016	.557204	.513373	.473176	.436297	.371364	.316574	.270269
18	.700159	.641766	.587399	.538361	.493628	.452800	.415521	.350344	.295864	.250249
19	.686431	.625528	.570286	.520156	.474642	.433302	.395734	.330513	.276508	.231712
20	.672971	.610271	.553676	.502566	.456387	.414643	.376889	.311803	.258419	.214548
21	.659776	.595386	.537549	.485571	.438834	.396787	.358942	.294155	.241513	.198655
22	.646839	.580865	.521893	.469151	.421953	.379701	.341850	.277303	.225713	.183940
23	.634156	.566697	.506692	.453286	.405726	.363350	.325571	.261797	.210947	.170315
24	.621721	.552875	.491934	.437957	.390121	.347703	.310068	.246979	.197146	.157699
25	.609531	.539391	.477606	.423147	.375117	.332731	.295303	.232999	.184249	.146018
26	.597579	.526235	.463695	.408838	.360689	.318402	.281241	.219810	.172195	.135201
27	.585862	.513399	.450189	.395012	.346817	.304691	.267848	.207368	.160930	.125186
28	.574374	.500878	.437077	.381654	.333477	.291571	.255094	.195630	.150402	.115913
29	.563112	.488661	.424346	.368748	.320651	.279015	.242946	.184557	.140562	.107327
30	.552071	.476743	.411987	.356278	.308319	.267000	.231377	.174116	.131367	.099377
31	.541246	.465115	.399987	.344230	.296460	.255502	.220359	.162425	.122773	.092016
32	.530633	.453770	.388337	.332590	.285058	.244500	.209866	.151957	.114741	.085200
33	.520229	.442703	.377026	.321343	.274094	.233971	.199873	.146186	.107234	.078989
34	.510028	.431905	.366045	.310476	.263552	.223896	.190355	.137912	.100219	.073045
35	.500029	.421371	.355383	.299977	.253415	.214254	.181290	.130105	.093663	.067634
36	.490223	.411093	.345032	.289833	.243669	.205029	.172657	.122741	.087535	.062624
37	.480611	.401067	.334983	.280032	.234297	.196199	.164436	.115793	.081808	.057985
38	.471187	.391285	.325226	.270562	.225283	.187750	.156605	.109239	.076456	.053690
39	.461948	.381741	.315754	.261413	.216621	.179665	.149148	.103056	.071455	.049713
40	.452890	.372430	.306557	.252572	.208289	.171928	.142046	.097222	.066780	.046031
41	.444010	.363347	.297628	.244031	.200278	.164523	.135282	.091719	.062412	.042621
42	.435304	.354485	.288959	.235779	.192575	.157440	.128840	.086527	.058328	.039464
43	.426769	.345839	.280543	.227806	.185168	.150661	.122704	.081630	.054512	.036540
44	.418401	.337404	.272372	.220102	.178046	.144173	.116861	.077009	.050946	.033834
45	.410197	.329174	.264439	.212659	.171198	.137964	.111297	.072650	.047613	.031327
46	.402153	.321146	.256737	.205468	.164614	.132023	.105997	.068538	.044498	.029907
47	.394268	.313313	.249259	.198520	.158283	.126338	.100949	.064658	.041587	.026858
48	.386537	.305671	.241999	.191906	.152195	.120898	.096142	.060998	.038966	.024869
49	.378958	.298216	.234950	.185320	.146341	.115692	.091564	.057540	.036324	.023007
50	.371529	.290942	.228107	.179053	.140713	.110710	.087204	.054289	.033947	.021321

TABLE I.—(continued.)

Year.	2	2½	3	3½	4	4½	5	6	7	8
	per Cent.	per Cent.	per Cent.	per Cent.	per Cent.	per Cent.	per Cent.	per Cent.	per Cent.	per Cent.
51.	.364243	.283846	.221463	.172998	.135301	.105942	.083051	.051215	.031726	.019741
52.	.357101	.276923	.215013	.167148	.130097	.101380	.079096	.048316	.029651	.018279
53.	.350099	.270168	.208750	.161496	.125093	.097014	.075330	.045582	.027711	.016925
54.	.343234	.263579	.202670	.156035	.120282	.092837	.071743	.043001	.025898	.015671
55.	.336504	.257150	.196767	.150758	.115656	.088839	.068326	.040567	.024204	.014510
56.	.329906	.250878	.191036	.145660	.111207	.085013	.065073	.038271	.022620	.013436
57.	.323437	.244759	.185472	.140734	.106930	.081353	.061974	.036105	.021141	.012440
58.	.317095	.238790	.180070	.135975	.102817	.077849	.059023	.034061	.019758	.011519
59.	.310878	.232966	.174825	.131377	.098863	.074497	.056212	.032133	.018465	.010665
60.	.304782	.227283	.169733	.126934	.095060	.071289	.053536	.030314	.017257	.009875
61.	.298806	.221740	.164789	.122642	.091404	.068219	.050986	.028598	.016128	.009144
62.	.292947	.216332	.159990	.118495	.087889	.065281	.048558	.026980	.015073	.008467
63.	.287203	.211055	.155330	.114487	.084508	.062470	.046246	.025453	.014087	.007839
64.	.281572	.205907	.150806	.110616	.081258	.059780	.044044	.024012	.013165	.007259
65.	.276051	.200883	.146413	.106875	.078133	.057206	.041946	.022653	.012304	.006721
66.	.270638	.195986	.142149	.103261	.075128	.054743	.039949	.021370	.010499	.006223
67.	.265331	.191205	.138009	.099769	.072238	.052385	.038047	.020161	.010747	.005762
68.	.260128	.186542	.133989	.096395	.069460	.050129	.036235	.019020	.010044	.005335
69.	.255028	.181992	.130086	.093136	.066788	.047971	.034509	.017943	.009386	.004940
70.	.250027	.177553	.126297	.089986	.064219	.045905	.032866	.016927	.008772	.004574
71.	.245125	.173223	.122619	.086943	.061749	.043928	.031301	.015969	.009198	.004235
72.	.240319	.168998	.119047	.084003	.059374	.042037	.029811	.015065	.007662	.003921
73.	.235607	.164876	.115580	.081162	.057091	.040226	.028391	.014213	.007161	.003631
74.	.230987	.160854	.112214	.078418	.054895	.038494	.027039	.013408	.006692	.003362
75.	.226457	.156931	.108945	.075766	.052784	.036836	.025752	.012649	.006254	.003113
76.	.222017	.153104	.105772	.073204	.050754	.035259	.024525	.011933	.005845	.002884
77.	.217664	.149369	.102691	.070728	.048801	.033732	.023357	.011258	.005463	.002669
78.	.213396	.145726	.099700	.068336	.046924	.032280	.022245	.010620	.005105	.002471
79.	.209212	.142172	.096796	.066026	.045120	.030890	.021188	.010019	.004771	.002288
80.	.205109	.138704	.093977	.063793	.043384	.029559	.020177	.009452	.004459	.002118
81.	.201088	.135321	.091240	.061636	.041716	.028287	.019216	.008917	.004167	.001961
82.	.197145	.132021	.088582	.059551	.040111	.027069	.018301	.008412	.003895	.001816
83.	.193279	.128801	.086002	.057538	.038569	.025903	.017430	.007936	.003640	.001682
84.	.189490	.125659	.083497	.055592	.037085	.024787	.016600	.007487	.003402	.001557
85.	.185774	.122594	.081063	.053712	.035659	.023720	.015809	.007063	.003179	.001442
86.	.182132	.119604	.078704	.051896	.034287	.022699	.015056	.006663	.002971	.001335
87.	.178560	.116687	.076412	.050141	.032969	.021721	.014339	.006286	.002777	.001236
88.	.175059	.113841	.074186	.048445	.031701	.020786	.013657	.005930	.002595	.001144
89.	.171627	.111065	.072026	.046807	.030481	.019891	.013006	.005595	.002425	.001060
90.	.168261	.108356	.069928	.045224	.029309	.019034	.012357	.005278	.002267	.000981
91.	.164962	.105713	.067891	.043695	.028182	.018215	.011797	.004979	.002118	.000908
92.	.161727	.103134	.065914	.042217	.027098	.017430	.011235	.004697	.001980	.000841
93.	.158556	.100619	.063994	.040789	.026056	.016680	.010700	.004432	.001850	.000779
94.	.155447	.098165	.062130	.039410	.025053	.015961	.010191	.004181	.001729	.000721
95.	.152399	.095770	.060320	.038077	.024090	.015274	.009705	.003944	.001616	.000668
96.	.149411	.093435	.058563	.036790	.023163	.014616	.009243	.003721	.001510	.000618
97.	.146482	.091156	.056858	.035546	.022272	.013957	.008803	.003510	.001411	.000572
98.	.143609	.088932	.055202	.034344	.021416	.013385	.008384	.003312	.001319	.000530
99.	.140793	.086763	.053594	.033182	.020592	.012808	.007985	.003124	.001233	.000491
100.	.138033	.084647	.052033	.032060	.019800	.012357	.007604	.002947	.001152	.000454

TABLE II.

The present Value of an Annuity of 1*l*. for any Number of Years not exceeding 100, at the several Rates of 2, 2½, 3, 3½, 4, 5, 6, 7, and 8 per Cent.

Years.	2 per Cent.	2½ per Cent.	3 per Cent.	3½ per Cent.	4 per Cent.	5 per Cent.	6 per Cent.	7 per Cent.	8 per Cent.
1	.9803	.9756	.9708	.9662	.9615	.9523	.9433	.9345	.9259
2	1.9415	1.9274	1.9134	1.8997	1.8861	1.8594	1.8333	1.8080	1.7832
3	2.8838	2.8560	2.8286	2.8016	2.7751	2.7232	2.6730	2.6243	2.5770
4	3.8077	3.7619	3.7170	3.6731	3.6299	3.5459	3.4651	3.3872	3.3121
5	4.7134	4.6458	4.5797	4.5151	4.4518	4.3294	4.2123	4.1001	3.9927
6	5.6014	5.5081	5.4171	5.3266	5.2421	5.0756	4.9173	4.7665	4.6228
7	6.4719	6.3493	6.2302	6.1145	6.0020	5.7863	5.5823	5.3892	5.2063
8	7.3254	7.1701	7.0196	6.8740	6.7327	6.4632	6.2097	5.9712	5.7466
9	8.1622	7.9708	7.7861	7.6077	7.4353	7.1078	6.8016	6.5152	6.2468
10	8.9825	8.7520	8.5302	8.3166	8.1109	7.7217	7.3600	7.0235	6.7100
11	9.7868	9.5142	9.2526	9.0015	8.7605	8.3064	7.8863	7.4986	7.1389
12	10.575	10.257	9.9540	9.6633	9.3850	8.8632	8.3838	7.9426	7.5360
13	11.348	10.983	10.6349	10.3027	9.9856	9.3935	8.8526	8.3576	7.9037
14	12.106	11.690	11.2960	10.9205	10.5631	9.8986	9.2949	8.7454	8.2442
15	12.849	12.381	11.9379	11.5174	11.1184	10.3796	9.7122	9.1079	8.5594
16	13.577	13.055	12.5611	12.0941	11.6523	10.8377	10.1058	9.4466	8.8513
17	14.291	13.712	13.1661	12.6513	12.1656	11.2740	10.4772	9.7632	9.1216
18	14.992	14.353	13.7535	13.1897	12.6593	11.6895	10.8276	10.059	9.3718
19	15.678	14.978	14.3238	13.7098	13.1339	12.0853	11.1581	10.335	9.6035
20	16.351	15.589	14.8774	14.2124	13.5903	12.4622	11.4699	10.594	9.8181
21	17.011	16.184	15.4150	14.6980	14.0291	12.8211	11.7640	10.835	10.016
22	17.658	16.765	15.9369	15.1671	14.4511	13.1630	12.0415	11.061	10.200
23	18.292	17.332	16.4436	15.6204	14.8568	13.4885	12.3033	11.272	10.371
24	18.913	17.884	16.9355	16.0584	15.2469	13.7986	12.5503	11.469	10.528
25	19.523	18.424	17.4131	16.4815	15.6220	14.0939	12.7833	11.653	10.674
26	20.121	18.950	17.8768	16.8904	15.9827	14.3751	13.0031	11.825	10.809
27	20.706	19.464	18.3270	17.2854	16.3295	14.6430	13.2105	11.986	10.935
28	21.281	19.964	18.7641	17.6670	16.6630	14.8931	13.4061	12.137	11.051
29	21.844	20.453	19.1884	18.0358	16.9837	15.1410	13.5907	12.277	11.158
30	22.396	20.930	19.6004	18.3920	17.2920	15.3724	13.7648	12.409	11.257
31	22.937	21.395	20.0004	18.7363	17.5884	15.5928	13.9290	12.531	11.349
32	23.468	21.849	20.3887	19.0689	17.8735	15.8026	14.0840	12.646	11.434
33	23.988	22.291	20.7657	19.3902	18.1476	16.0025	14.2302	12.753	11.513
34	24.498	22.723	21.1318	19.7007	18.4111	16.1929	14.3681	12.854	11.586
35	24.998	23.145	21.4872	20.0007	18.6646	16.3741	14.4982	12.947	11.654
36	25.488	23.556	21.8322	20.2905	18.9082	16.5468	14.6209	13.035	11.717
37	25.969	23.957	22.1672	20.5705	19.1425	16.7112	14.7367	13.117	11.775
38	26.440	24.348	22.4924	20.8411	19.3678	16.8678	14.8460	13.193	11.828
39	26.902	24.730	22.8082	21.1025	19.5844	17.0170	14.9490	13.264	11.878
40	27.355	25.102	23.1147	21.3551	19.7927	17.1590	15.0462	13.331	11.924
41	27.799	25.466	23.4124	21.5991	19.9936	17.2943	15.1380	13.394	11.967
42	28.234	25.820	23.7013	21.8349	20.1856	17.4232	15.2245	13.452	12.006
43	28.661	26.166	23.9819	22.0627	20.3707	17.5459	15.3061	13.507	12.043
44	29.079	26.503	24.2542	22.2828	20.5488	17.6627	15.3831	13.557	12.077
45	29.490	26.833	24.5187	22.4955	20.7200	17.7740	15.4558	13.605	12.108
46	29.892	27.154	24.7754	22.7009	20.8846	17.8800	15.5243	13.650	12.137
47	30.286	27.467	25.0247	22.8994	21.0429	17.9810	15.5890	13.691	12.164
48	30.673	27.773	25.2667	23.0912	21.1951	18.0771	15.6500	13.730	12.189
49	31.052	28.071	25.5016	23.2766	21.3414	18.1687	15.7075	13.766	12.212
50	31.423	28.362	25.7297	23.4556	21.4821	18.2559	15.7618	13.800	12.233

TABLE II.—(continued.)

Years.	2 per Cent.	2½ per Cent.	3 per Cent.	3½ per Cent.	4 per Cent.	5 per Cent.	6 per Cent.	7 per Cent.	8 per Cent.
51	31.787	28.646	25.9512	23.6286	21.6174	18.3389	15.8130	13.832	12.253
52	32.144	28.923	26.1662	23.7958	21.7475	18.4180	15.8613	13.862	12.271
53	32.495	29.193	26.3749	23.9571	21.8726	18.4934	15.9069	13.889	12.288
54	32.835	29.456	26.5776	24.1133	21.9929	18.5651	15.9499	13.915	12.304
55	33.174	29.713	26.7744	24.2641	22.1086	18.6334	15.9905	13.939	12.318
56	33.504	29.964	26.9654	24.4097	22.2198	18.6985	16.0288	13.962	12.332
57	33.828	30.209	27.1509	24.5504	22.3267	18.7605	16.0649	13.983	12.344
58	34.145	30.448	27.3310	24.6864	22.4295	18.8195	16.0989	14.003	12.356
59	34.456	30.681	27.5058	24.8178	22.5284	18.8757	16.1311	14.021	12.366
60	34.760	30.908	27.6755	24.9447	22.6234	18.9292	16.1614	14.039	12.376
61	35.059	31.130	27.8403	25.0674	22.7148	18.9802	16.1900	14.055	12.385
62	35.352	31.346	28.0003	25.1859	22.8027	19.0298	16.2170	14.070	12.394
63	35.639	31.557	28.1556	25.3004	22.8872	19.0750	16.2424	14.084	12.402
64	35.921	31.763	28.3064	25.4110	22.9685	19.1191	16.2664	14.097	12.409
65	36.197	31.964	28.4528	25.5178	23.0466	19.1610	16.2891	14.104	12.415
66	36.468	32.160	28.5950	25.6211	23.1218	19.2010	16.3104	14.121	12.422
67	36.733	32.351	28.7330	25.7209	23.1940	19.2390	16.3306	14.132	12.427
68	36.993	32.538	28.8670	25.8173	23.2635	19.2753	16.3496	14.142	12.433
69	37.248	32.720	28.9971	25.9104	23.3302	19.3098	16.3676	14.151	12.436
70	37.498	32.897	29.1234	26.0004	23.3945	19.3426	16.3845	14.160	12.442
71	37.743	33.071	29.2460	26.0873	23.4562	19.3739	16.4005	14.168	12.447
72	37.984	33.240	29.3650	26.1713	23.5156	19.4037	16.4155	14.176	12.450
73	38.219	33.404	29.4806	26.2525	23.5727	19.4321	16.4297	14.183	12.454
74	38.450	33.565	29.5928	26.3309	23.6276	19.4592	16.4431	14.190	12.457
75	38.677	33.722	29.7018	26.4067	23.6804	19.4849	16.4558	14.196	12.461
76	38.899	33.875	29.8076	26.4799	23.7311	19.5094	16.4677	14.202	12.463
77	39.116	34.025	29.9103	26.5506	23.7799	19.5328	16.4790	14.207	12.466
78	39.330	34.170	30.0099	26.6190	23.8268	19.5550	16.4896	14.212	12.468
79	39.539	34.313	30.1067	26.6850	23.8720	19.5762	16.4996	14.217	12.471
80	39.744	34.451	30.2007	26.7488	23.9153	19.5964	16.5091	14.222	12.473
81	39.945	34.587	30.2920	26.8104	23.9571	19.6156	16.5180	14.226	12.475
82	40.142	34.719	30.3805	26.8700	23.9972	19.6339	16.5264	14.230	12.477
83	40.336	34.847	30.4665	26.9275	24.0357	19.6514	16.5343	14.233	12.478
84	40.525	34.973	30.5500	26.9831	24.0728	19.6680	16.5418	14.237	12.480
85	40.711	35.096	30.6311	27.0368	24.1085	19.6838	16.5489	14.240	12.481
86	40.893	35.215	30.7098	27.0887	24.1428	19.6988	16.5556	14.243	12.483
87	41.071	35.332	30.7862	27.1388	24.1757	19.7132	16.5618	14.246	12.484
88	41.247	35.446	30.8604	27.1873	24.2074	19.7268	16.5678	14.248	12.485
89	41.418	35.557	30.9324	27.2341	24.2379	19.7398	16.5734	14.251	12.486
90	41.586	35.665	31.0024	27.2793	24.2672	19.7522	16.5787	14.253	12.487
91	41.751	35.771	31.0703	27.3230	24.2954	19.7640	16.5836	14.255	12.488
92	41.913	35.874	31.1362	27.3652	24.3225	19.7752	16.5883	14.257	12.489
93	42.072	35.975	31.2002	27.4060	24.3486	19.7859	16.5928	14.259	12.490
94	42.227	36.073	31.2623	27.4454	24.3736	19.7961	16.5969	14.261	12.491
95	42.380	36.169	31.3226	27.4835	24.3977	19.8058	16.6009	14.262	12.491
96	42.529	36.262	31.3812	27.5203	24.4209	19.8151	16.6046	14.264	12.492
97	42.675	36.353	31.4380	27.5558	24.4431	19.8239	16.6081	14.265	12.492
98	42.819	36.442	31.4932	27.5902	24.4646	19.8323	16.6114	14.266	12.493
99	42.960	36.529	31.5468	27.6234	24.4852	19.8403	16.6145	14.268	12.493
100	43.098	36.614	31.5989	27.6554	24.5050	19.8479	16.6175	14.269	12.494
Per.	50.000	40.000	33.3333	28.5714	25.0000	20.0000	16.6667	14.286	12.500

TABLE III.—Showing the Sum to which 1l. Principal will increase at Compound Interest in any Number of Years not exceeding 100.

Years	2	3	4	5	6	7	8	9
per Cent.	per Cent.	per Cent.	per Cent.	per Cent.	per Cent.	per Cent.	per Cent.	per Cent.
1	1.02000	1.03000	1.04000	1.05000	1.06000	1.07000	1.08000	1.09000
2	1.04040	1.06060	1.08080	1.10100	1.12120	1.14140	1.16160	1.18180
3	1.06120	1.07693	1.09267	1.10841	1.12415	1.13989	1.15563	1.17137
4	1.08243	1.10381	1.12519	1.14657	1.16795	1.18933	1.21071	1.23209
5	1.10408	1.13140	1.15874	1.18608	1.21342	1.24076	1.26810	1.29544
6	1.12616	1.15959	1.19302	1.22645	1.25988	1.29331	1.32674	1.36017
7	1.14868	1.18618	1.22368	1.26118	1.29868	1.33618	1.37368	1.41118
8	1.17163	1.21840	1.26517	1.31194	1.35871	1.40548	1.45225	1.49902
9	1.19509	1.24846	1.30183	1.35520	1.40857	1.46194	1.51531	1.56868
10	1.21899	1.27608	1.33317	1.39026	1.44735	1.50444	1.56153	1.61862
11	1.24337	1.30408	1.36479	1.42550	1.48621	1.54692	1.60763	1.66834
12	1.26824	1.33288	1.39759	1.46230	1.52701	1.59172	1.65643	1.72114
13	1.29362	1.36231	1.43102	1.49573	1.56044	1.62515	1.68986	1.75457
14	1.31949	1.39297	1.46568	1.53839	1.60110	1.66381	1.72652	1.78923
15	1.34586	1.42189	1.49860	1.57531	1.65202	1.72873	1.80544	1.88215
16	1.37273	1.45150	1.53021	1.60892	1.68763	1.76634	1.84505	1.92376
17	1.40009	1.48161	1.56312	1.64463	1.72614	1.80765	1.88916	1.97067
18	1.42794	1.51095	1.59446	1.67797	1.76148	1.84499	1.92850	2.01201
19	1.45628	1.54665	1.63216	1.71767	1.80318	1.88869	1.97420	2.05971
20	1.48509	1.58361	1.67112	1.75963	1.84714	1.93465	2.02216	2.11067
21	1.51536	1.62198	1.71149	1.80300	1.89551	1.98802	2.08053	2.17304
22	1.54609	1.65461	1.74712	1.84063	1.93514	2.02965	2.12416	2.21867
23	1.57728	1.68824	1.78375	1.87926	1.97577	2.07228	2.16879	2.26530
24	1.60893	1.72287	1.82138	1.92099	2.01950	2.11801	2.21652	2.31503
25	1.64104	1.75740	1.85791	1.95852	2.05903	2.15954	2.26005	2.36156
26	1.67360	1.79251	1.89502	2.00013	2.10264	2.20515	2.30766	2.40907
27	1.70661	1.82822	1.93273	2.04524	2.14875	2.25186	2.35437	2.45758
28	1.74007	1.86493	1.97144	2.09135	2.19586	2.29897	2.40208	2.50609
29	1.77400	1.90224	2.01075	2.13846	2.24397	2.34708	2.45019	2.55460
30	1.80841	1.94015	2.05066	2.18657	2.29208	2.39519	2.49830	2.60311
31	1.84329	1.97866	2.09117	2.23568	2.34219	2.44530	2.54841	2.65162
32	1.87864	2.01777	2.13228	2.28579	2.39230	2.49541	2.59752	2.70013
33	1.91445	2.05748	2.17399	2.33690	2.44341	2.54652	2.64863	2.74864
34	1.95070	2.09779	2.21630	2.38801	2.49452	2.59763	2.69974	2.79715
35	1.98739	2.13870	2.25921	2.43912	2.54563	2.64874	2.75085	2.84566
36	2.02452	2.18021	2.30172	2.49123	2.59674	2.69985	2.80196	2.89417
37	2.06209	2.22232	2.34523	2.54434	2.64785	2.75096	2.85307	2.94268
38	2.10010	2.26503	2.38974	2.59745	2.69896	2.80207	2.90418	2.99119
39	2.13855	2.30834	2.43525	2.65156	2.75007	2.85318	2.95529	3.03970
40	2.17744	2.35225	2.48076	2.70567	2.80118	2.90429	3.00681	3.08821
41	2.21677	2.39676	2.52627	2.76078	2.85229	2.95540	3.05832	3.13672
42	2.25654	2.44187	2.57178	2.81589	2.90340	3.00651	3.10983	3.18523
43	2.29675	2.48758	2.61789	2.87100	2.95451	3.05762	3.16134	3.23374
44	2.33740	2.53389	2.66400	2.92611	3.00562	3.10873	3.21285	3.28225
45	2.37849	2.58070	2.71011	2.98122	3.05673	3.15984	3.26436	3.33076
46	2.41999	2.62801	2.75622	3.03633	3.10784	3.21095	3.31587	3.37927
47	2.46190	2.67582	2.80233	3.09144	3.15895	3.26206	3.36738	3.42778
48	2.50421	2.72413	2.84844	3.14655	3.20906	3.31317	3.41889	3.47629
49	2.54692	2.77294	2.89455	3.20166	3.25917	3.36428	3.47040	3.52480
50	2.59003	2.82225	2.94066	3.25677	3.30928	3.41539	3.52191	3.57331
51	2.63354	2.87206	2.98677	3.31188	3.35939	3.46650	3.57342	3.62182
52	2.67745	2.92237	3.03288	3.36699	3.40950	3.51761	3.62493	3.67033
53	2.72176	2.97318	3.07899	3.42210	3.45961	3.56872	3.67644	3.71884
54	2.76647	3.02449	3.12510	3.47721	3.50972	3.61983	3.72795	3.76735
55	2.81158	3.07630	3.17121	3.53232	3.55983	3.67094	3.77946	3.81586
56	2.85709	3.12861	3.21732	3.58743	3.60994	3.72205	3.83097	3.86437
57	2.90290	3.18152	3.26343	3.64254	3.65905	3.77316	3.88248	3.91288
58	2.94901	3.23493	3.30954	3.69765	3.70816	3.82427	3.93399	3.96139
59	2.99542	3.28884	3.35565	3.75276	3.75727	3.87538	3.98550	4.00990
60	3.04223	3.34325	3.40176	3.80787	3.80638	3.92649	4.03701	4.05841
61	3.08944	3.39816	3.44787	3.86298	3.85549	3.97760	4.08852	4.10692
62	3.13705	3.45357	3.49398	3.91809	3.90460	4.02871	4.13963	4.15543
63	3.18506	3.50948	3.54009	3.97320	3.95371	4.07982	4.19074	4.20394
64	3.23347	3.56589	3.58620	4.02831	4.00282	4.13093	4.24185	4.25245
65	3.28228	3.62280	3.63231	4.08342	4.05193	4.18204	4.29296	4.30096
66	3.33149	3.68021	3.67882	4.13853	4.10104	4.23315	4.34407	4.34947
67	3.38110	3.73812	3.72743	4.19364	4.14915	4.28426	4.39518	4.39798
68	3.43111	3.79653	3.78554	4.24875	4.19726	4.33537	4.44629	4.44649
69	3.48152	3.85544	3.83425	4.30386	4.24537	4.38648	4.49740	4.49500
70	3.53233	3.91485	3.89346	4.35897	4.29348	4.43759	4.54851	4.54351
71	3.58354	3.97476	3.95257	4.41408	4.34159	4.48870	4.59962	4.59202
72	3.63515	4.03517	4.00998	4.46919	4.38970	4.53981	4.65073	4.64053
73	3.68716	4.09608	4.06989	4.52430	4.43781	4.59092	4.70184	4.68904
74	3.73957	4.15749	4.12930	4.57941	4.48592	4.64203	4.75295	4.73755
75	3.79238	4.21940	4.18921	4.63452	4.53403	4.69314	4.80406	4.78606
76	3.84559	4.28181	4.24912	4.68963	4.58214	4.74425	4.85517	4.83457
77	3.89920	4.34472	4.30903	4.74474	4.63025	4.79536	4.90628	4.88308
78	3.95321	4.40813	4.36894	4.79985	4.67836	4.84647	4.95739	4.93159
79	4.00762	4.47204	4.42885	4.85496	4.72647	4.89758	5.00850	4.98010
80	4.06243	4.53645	4.48876	4.91007	4.77458	4.94869	5.05961	5.02861
81	4.11764	4.60136	4.54867	4.96518	4.82269	4.99980	5.11072	5.07712
82	4.17325	4.66677	4.60858	5.02029	4.87080	5.05091	5.16183	5.12563
83	4.22926	4.73268	4.66849	5.07540	4.91891	5.10202	5.21294	5.17414
84	4.28567	4.79909	4.72840	5.13051	4.96702	5.15313	5.26405	5.22265
85	4.34248	4.86600	4.78831	5.18562	5.01513	5.20424	5.31516	5.27116
86	4.39969	4.93341	4.84822	5.24073	5.06324	5.25535	5.36627	5.31967
87	4.45730	5.00132	4.90813	5.29584	5.11135	5.30646	5.41738	5.36818
88	4.51531	5.06973	4.96804	5.35095	5.15946	5.35757	5.46849	5.41669
89	4.57372	5.13864	5.02795	5.40606	5.20757	5.40868	5.51960	5.46520
90	4.63253	5.20805	5.08786	5.46117	5.25568	5.45979	5.57071	5.51371
91	4.69174	5.27796	5.14777	5.51628	5.30379	5.51090	5.62182	5.56222
92	4.75135	5.34837	5.20768	5.57139	5.35190	5.56201	5.67293	5.61073
93	4.81136	5.41928	5.26759	5.62650	5.39901	5.61312	5.72404	5.65924
94	4.87177	5.49069	5.32750	5.68161	5.44712	5.66423	5.77515	5.70775
95	4.93258	5.56260	5.38741	5.73672	5.49523	5.71534	5.82626	5.75626
96	4.99379	5.63501	5.44732	5.79183	5.54334	5.76645	5.87737	5.80477
97	5.05540	5.70792	5.50723	5.84694	5.59145	5.81756	5.92848	5.85328
98	5.11741	5.78133	5.56714	5.90205	5.63956	5.86867	5.97959	5.90179
99	5.18002	5.85524	5.62705	5.95716	5.68767	5.91978	6.03070	5.95030
100	5.24323	5.92965	5.68696	6.01227	5.73578	5.97089	6.08181	6.00000



TABLE III.—(continued.)

Years.	2	2½	3	3½	4	5	6	7	8	9
	per Cent.	per Cent.	per Cent.	per Cent.	per Cent.	per Cent.	per Cent.	per Cent.	per Cent.	per Cent.
71	4.07954	5.77390	8.155,366	11,501,774	16,194,483	31,947,746	62,690,483	121,968	236,694	454,235
72	4.16114	5.91723	8.402,617	11,904,336	16,849,262	33,545,134	66,377,715	130,566	254,988	495,117
73	4.24436	6.06515	8.652,617	12,320,988	17,515,952	35,273,390	70,360,378	139,641	275,381	509,677
74	4.32935	6.21678	8.911,578	12,752,222	18,216,301	36,983,510	74,582,000	149,415	297,411	568,948
75	4.41583	6.37220	9.175,935	13,198,556	18,945,354	38,832,885	79,056,920	159,876	318,104	611,190
76	4.50415	6.53151	9.454,293	13,660,493	19,703,664	40,774,320	83,800,336	171,067	346,900	658,898
77	4.59423	6.69480	9.737,922	14,136,617	20,491,187	42,813,636	89,839,356	183,042	374,636	761,794
78	4.68619	6.86177	10,030,050	14,633,408	21,310,834	44,953,689	94,138,057	195,854	404,625	800,360
79	4.77984	7.03372	10,330,961	15,145,840	22,163,268	47,201,372	99,807,541	209,564	436,995	855,093
80	4.87543	7.20956	10,640,890	15,675,737	23,049,799	49,561,441	105,795,993	224,234	471,954	950,551
81	4.97294	7.39030	10,960,117	16,224,388	23,971,791	52,030,513	112,143,753	239,930	509,711	1075,34
82	5.07240	7.57453	11,288,920	16,792,241	24,930,662	54,641,498	118,872,978	256,735	550,488	1172,12
83	5.17385	7.76391	11,627,888	17,379,976	25,927,869	57,373,563	126,004,730	274,596	594,537	1277,51
84	5.27733	7.95891	11,976,416	17,988,269	26,965,004	60,242,341	133,565,004	293,985	642,669	1392,69
85	5.38287	8.15936	12,335,798	18,617,854	28,043,604	63,254,353	141,578,904	314,560	693,456	1517,93
86	5.49053	8.36688	12,705,779	19,269,483	29,168,349	66,417,071	150,073,638	336,515	748,938	1654,54
87	5.60034	8.58291	13,088,953	19,943,915	30,331,963	69,737,294	159,078,057	360,071	808,847	1803,45
88	5.71235	8.81415	13,479,561	20,641,952	31,545,341	73,224,890	168,629,740	385,976	873,555	1965,76
89	5.82660	9.04370	13,883,948	21,364,361	32,807,651	76,895,061	178,740,104	412,245	943,439	2142,68
90	5.94313	9.28975	14,300,467	22,112,175	34,119,333	80,730,365	189,464,511	441,192	1018,49	2335,32
91	6.06199	9.54957	14,739,481	22,886,109	35,484,106	84,766,883	200,839,381	471,980	1100,43	2545,72
92	6.18323	9.82060	15,171,363	23,687,115	36,903,470	89,005,237	212,892,334	505,018	1188,45	2774,45
93	6.30690	9.89446	15,626,506	24,516,164	38,379,609	93,455,488	225,655,264	540,370	1293,53	3004,57
94	6.43303	10.1810	16,095,301	25,374,830	39,914,794	98,128,263	239,194,580	578,196	1396,32	3266,76
95	6.56169	10.416	16,578,160	26,262,338	41,511,383	103,034,676	253,546,251	618,662	1471,12	3503,49
96	6.69298	10.7026	17,075,505	27,181,510	43,171,841	108,126,410	268,759,600	661,976	1516,29	3816,61
97	6.82679	10.9792	17,597,778	28,136,869	44,896,715	113,595,700	284,846,572	708,314	1746,24	4098,43
98	6.96332	11.2444	18,115,403	29,117,513	46,684,663	119,375,517	301,977,646	757,897	1885,94	4603,68
99	7.10259	11.5235	18,658,860	30,136,298	48,569,450	125,599,293	320,096,305	810,949	2036,81	5072,51
100	7.24464	11.8137	19,218,635	31,191,408	50,544,948	132,581,257	339,309,683	867,716	2199,76	5629,04

TABLE IV.—Showing the Sum to which 11. per Annum will increase at Compound Interest in any Number of Years not exceeding 100.

Years.	2	2½	3	3½	4	5	6	7	8	9
	per Cent.	per Cent.	per Cent.	per Cent.	per Cent.	per Cent.	per Cent.	per Cent.	per Cent.	per Cent.
1	1.00000	1.00000	1.000,000	1.000,000	1.000,000	1.000,000	1.000,000	1.00000	1.00000	1.00000
2	2.02000	2.02000	9.030,000	9.030,000	2.040,000	2.050,000	2.060,000	2.07000	2.08000	2.09000
3	3.06040	3.07639	3.076,900	3.106,355	3.131,606	3.159,360	3.183,400	3.21490	3.24640	3.27810
4	4.11660	4.15253	4.183,927	4.244,947	4.296,464	4.319,125	4.374,616	4.43994	4.50611	4.57319
5	5.19404	5.25653	5.319,138	5.362,265	5.416,322	5.528,631	5.637,025	5.75073	5.86669	5.98471
6	6.30819	6.38773	6.469,409	6.550,189	6.631,975	6.801,912	6.976,318	7.15329	7.33296	7.51503
7	7.44348	7.54743	7.662,462	7.779,407	7.898,294	8.143,608	8.398,357	8.65402	8.92020	9.19843
8	8.59398	8.73611	8.892,338	9.051,686	9.214,226	9.549,108	9.897,467	10.2596	10.6360	11.0210
9	9.75462	9.95451	10,159,106	10,368,435	10,582,795	11,036,564	11,491,315	11,977,279	12,487,5	13,0210
10	10.9407	11.2033	11,463,879	11,731,383	12,006,107	12,577,892	13,180,794	13,8184	14,4855	15,1929
11	12.1687	12.4834	12,807,795	13,141,991	13,486,351	14,206,787	14,791,642	15,7936	16,6454	17,5692
12	13.4120	13.7955	14,192,094	14,601,961	15,053,805	15,917,126	16,869,941	17,8884	18,9771	20,1407
13	14.6803	15,1404	15,617,790	16,113,026	16,636,837	17,712,982	18,882,137	20,1406	21,4952	22,9533
14	15.9739	16,5193	17,086,394	17,676,988	18,291,911	19,586,631	21,015,065	22,5504	24,2149	26,0191
15	17.2954	17,9319	18,704,913	19,393,690	20,103,887	21,578,363	23,275,969	25,1290	27,1021	29,3069
16	18.6399	19,3699	20,466,961	21,261,971	22,091,894	23,857,491	25,879,328	28,0990	30,3948	32,8613
17	20.0190	20,8547	21,761,282	22,705,015	23,697,512	25,948,366	28,212,312	30,8990	33,7562	36,9737
18	21.4133	22,3603	23,114,435	24,199,691	25,345,412	28,132,864	30,968,453	33,9990	37,4402	41,3413
19	22.8445	23,9465	24,516,894	25,705,357	26,371,671	29,399,533	33,003,33	37,5918	41,4401	46,0184
20	24.2973	25,5446	26,070,274	27,279,681	28,778,078	33,065,984	35,745,691	40,9084	45,7612	51,1601
21	25.7833	27.1832	28,676,485	30,969,470	31,969,201	35,719,351	39,990,736	44,8451	50,4229	56,7645
22	27.2989	28.8928	30,536,728	32,929,969	34,247,960	38,565,944	43,392,290	49,0057	56,4567	62,8733
23	28.8419	30.5844	32,458,834	34,450,413	36,711,888	41,450,475	46,965,827	53,4261	60,8932	67,6319
24	30.4248	32.3490	34,426,470	36,666,529	38,982,604	44,561,958	50,815,57	58,1766	66,7647	76,7808
25	32.0369	34.1577	36,439,348	38,949,856	41,643,968	47,737,088	54,861,512	63,2490	73,1059	84,7008
26	33.6797	36.0117	38,503,944	41,313,101	44,311,744	51,113,453	59,156,382	69,6764	79,9544	93,3239
27	35.3443	37.9120	40,709,533	43,735,069	47,084,214	54,669,136	63,765,765	74,4808	87,3507	102,723
28	37.0312	39.8598	43,058,942	46,337,487	50,000,587	58,584,499	69,592,538	81,9097	95,3398	112,968
29	38.7922	41.8562	45,518,860	49,116,799	52,968,980	62,322,711	74,639,797	87,3465	103,953	124,135
30	40.5689	43.9027	47,525,415	51,622,677	56,084,937	66,438,847	79,638,166	94,6007	113,953	136,307

TABLE IV.—(continued.)

Year.	2 per Cent.	2½ per Cent.	3 per Cent.	3½ per Cent.	4 per Cent.	5 per Cent.	6 per Cent.	7 per Cent.	8 per Cent.	9 per Cent.
31	42,3794	46,0002	50,002,678	54,429,470	59,328,335	70,700,799	84,801,677	102,473	123,345	149,575
32	44,2270	48,1592	52,502,738	57,324,502	62,731,468	75,238,829	90,849,778	110,218	134,213	164,036
33	46,1115	50,3540	55,077,841	60,341,210	66,209,527	80,043,770	97,343,154	118,933	145,939	179,899
34	48,0339	52,6134	57,730,176	63,453,152	69,837,908	85,006,959	104,183,754	128,258	158,626	196,982
35	49,9944	54,9282	60,462,061	66,674,013	73,632,224	90,320,307	111,434,779	138,228	172,316	215,710
36	51,9943	57,3014	63,275,944	70,007,603	77,598,313	95,836,327	119,120,866	148,913	187,102	236,124
37	54,0342	59,7339	66,174,322	73,487,809	81,702,946	101,628,138	127,268,118	160,337	203,070	258,375
38	56,1149	62,2272	69,189,449	77,098,894	85,970,330	107,709,545	135,904,295	172,561	220,315	282,625
39	58,2372	64,7029	72,234,232	80,724,906	90,469,149	114,035,023	145,658,438	185,648	238,941	309,066
40	60,4019	67,4025	75,401,205	84,550,277	95,025,515	120,739,774	154,761,965	199,633	259,056	337,882
41	62,6106	70,0076	78,663,297	88,569,537	99,826,536	127,830,782	165,047,683	214,609	280,781	369,291
42	64,8622	72,8398	82,033,196	92,607,371	104,819,327	135,231,781	175,359,541	230,633	304,545	403,529
43	67,1604	75,6608	85,483,892	96,848,629	110,619,381	143,993,336	187,507,577	247,778	329,843	436,048
44	69,5098	78,5525	89,048,409	101,238,331	115,412,576	154,143,005	199,738,831	266,120	356,949	471,521
45	71,8997	81,5161	92,719,801	105,781,673	121,070,329	159,700,155	212,743,513	285,749	386,505	505,235
46	74,3309	84,5549	96,501,457	110,484,031	126,976,567	168,685,163	226,508,124	305,751	418,426	547,196
47	76,8171	87,0678	100,396,500	115,350,979	132,945,390	178,119,491	241,008,612	329,294	452,900	596,803
48	79,3533	90,8505	104,408,393	120,388,256	139,563,206	188,625,392	256,564,828	358,270	490,132	646,292
49	81,9405	94,1316	108,510,547	125,601,815	145,833,734	194,436,662	272,908,400	378,998	520,342	701,855
50	84,5794	97,4843	112,796,867	130,907,910	152,667,083	200,347,995	290,335,904	405,328	557,770	751,083
51	87,2709	100,921	117,180,773	136,982,837	159,773,787	220,815,395	308,756,658	435,983	620,671	889,441
52	90,0164	104,444	121,626,196	142,363,238	167,164,717	232,856,165	328,291,422	467,504	671,325	970,404
53	92,8167	108,055	126,347,682	148,345,949	174,851,306	245,438,973	348,278,307	501,209	726,031	1084,801
54	95,6739	111,756	131,137,494	154,538,657	182,845,358	258,773,922	370,917,006	537,816	783,114	1158,131
55	98,5963	115,550	136,117,619	160,946,809	191,159,173	273,718,019	394,172,826	575,908	849,543	1260,000
56	101,584	119,439	141,153,708	167,548,630	199,808,569	287,348,949	418,229,348	617,243	917,837	1374,500
57	104,649	123,435	145,368,331	174,445,332	208,797,761	302,715,660	444,951,689	661,459	992,254	1499,200
58	107,684	127,511	151,740,632	181,550,919	218,149,672	318,851,444	472,648,799	708,758	1072,64	1635,13
59	110,834	131,699	157,333,433	188,905,208	227,875,638	335,794,017	502,007,717	739,364	1159,45	1783,29
60	114,031	135,991	163,653,436	196,518,892	237,990,685	363,583,717	533,128,190	813,539	1233,31	1944,79
61	117,332	140,391	169,945,839	204,294,973	248,510,312	372,262,963	556,115,871	871,466	1384,47	2120,82
62	120,679	144,901	175,013,391	212,848,797	259,450,735	391,876,048	601,092,824	933,469	1463,82	2312,69
63	124,092	149,523	181,035,792	220,988,065	270,828,754	412,469,851	638,147,793	1009,812	1581,53	2521,84
64	127,574	154,261	187,701,706	229,732,585	282,661,904	434,030,343	677,426,661	1107,79	1708,48	2749,80
65	131,126	159,118	194,332,707	238,762,876	294,968,380	456,798,011	719,092,860	1176,75	1847,34	2994,28
66	134,748	164,096	201,162,740	248,119,577	307,767,115	480,637,115	763,227,432	1259,03	1996,62	3269,13
67	138,443	169,198	208,197,622	257,803,762	321,677,800	505,099,897	810,021,509	1314,29	2156,71	3564,35
68	142,212	174,422	215,445,551	267,836,894	334,920,912	531,081,327	859,692,777	1408,03	2330,84	3886,14
69	146,056	179,799	222,966,838	278,200,835	349,317,748	560,630,967	912,200,160	1507,60	2517,46	4236,50
70	149,977	185,984	230,694,063	289,937,864	364,590,458	588,528,510	967,932,169	1614,13	2720,08	4619,29
71	153,977	190,916	238,511,883	300,050,689	379,862,077	618,954,936	1027,008,099	1728,12	2938,68	5036,95
72	158,057	196,689	246,667,242	311,552,463	396,056,567	650,902,683	1089,028,585	1850,69	3174,78	5490,18
73	162,218	202,606	255,067,357	323,923,456,800	412,808,822	684,447,817	1156,006,260	1980,59	3429,76	5983,30
74	166,462	208,671	263,719,277	335,777,784	430,414,775	719,670,208	1226,366,679	2120,24	3705,14	6524,98
75	170,781	214,888	272,630,835	348,330,010	448,631,366	756,653,718	1298,548,679	2269,65	4002,85	7113,23
76	175,207	221,260	281,809,781	361,728,561	467,576,621	796,406,404	1380,605,906	2429,53	4323,76	7754,42
77	179,711	227,799	291,264,674	375,389,960	487,579,646	836,260,724	1463,605,936	2590,60	4670,66	8453,32
78	184,305	234,486	301,001,996	389,527,677	507,720,873	879,073,769	1552,634,322	2763,64	5045,31	9215,12
79	188,939	241,311	311,032,666	404,161,146	529,081,798	924,087,448	1646,792,380	2979,49	5449,94	10045,4
80	193,771	248,382	321,363,618	419,366,796	551,244,976	971,238,621	1746,599,691	3189,06	5965,93	10950,5
81	198,647	255,592	332,003,969	434,566,889	574,294,775	1020,700,922	1852,265,884	3413,29	6586,89	11937,1
82	203,600	262,982	342,964,036	451,905,919	598,266,566	1072,829,775	1964,539,637	3663,22	7268,60	13012,4
83	208,692	270,556	354,252,947	467,959,154	623,197,399	1127,471,264	2083,412,016	3909,25	7949,08	14184,5
84	213,865	278,329	365,880,535	485,379,195	649,125,118	1184,844,827	2209,416,737	4184,65	8701,61	15462,2
85	219,143	286,378	377,836,951	503,387,304	676,090,123	1245,087,068	2342,981,741	4478,87	9535,70	16854,8
86	224,526	294,453	390,190,601	521,985,292	704,133,728	1308,341,422	2484,560,644	4793,07	10409,16	18372,7
87	230,011	302,706	402,898,440	541,234,707	733,299,077	1374,738,483	2634,634,284	5129,59	11329,00	20027,2
88	235,617	311,266	415,995,395	561,186,623	763,631,040	1444,496,418	2793,712,341	5489,66	12308,7	21838,7
89	241,330	320,130	429,454,395	581,849,608	795,176,282	1517,791,328	2962,335,082	5874,98	13290,4	23795,5
90	247,156	329,154	443,348,903	603,905,027	827,983,333	1594,667,300	3141,675,187	6287,18	14375,9	25939,1
91	253,099	338,393	457,649,870	625,317,292	862,102,667	1675,237,605	3330,639,698	6708,28	15542,8	28294,7
92	259,161	347,842	472,375,894	648,335,305	897,586,773	1760,164,549	3531,327,680	7208,29	16843,2	30890,0
93	265,345	357,638	487,650,767	671,800,439	934,409,344	1849,169,776	3744,255,405	7705,26	18331,7	33570,9
94	271,651	367,477	503,176,723	696,406,585	972,809,854	1943,563,369	3969,100,649	8245,65	19818,2	36416,6
95	278,084	377,664	519,732,721	720,815,103	1012,784,648	2040,603,528	4199,104,949	8835,85	21370,1	39416,6
96	284,646	388,105	536,850,186	745,434,144	1054,296,034	2143,728,205	4462,650,504	9442,52	23019,6	42510,1
97	291,339	398,808	554,982,692	770,224,654	1097,467,875	2251,914,615	4747,499,834	10104,5	24815,5	45747,0
98	298,166	409,778	570,513,692	803,357,517	1142,366,590	2365,510,346	5016,294,106	10812,8	26761,7	49169,4
99	305,129	421,033	588,628,952	837,453,030	1189,061,254	2484,785,863	5318,177,753	11570,7	28747,7	52650,1
100	312,232	432,648	607,287,738	862,611,656	1237,633,704	2610,095,166	5638,368,058	12316,7	30894,5	56422,6

TABLE IV.—(continued.)

Years.	2	3	3	4	5	6	7	8	9
	per Cent.	per Cent.	per Cent.	per Cent.	per Cent.	per Cent.	per Cent.	per Cent.	per Cent.
31	42.3794	46.8092	50.802,678	54.429,470	59.328,325	70.760,789	84.891,677	102.072	123.315
32	44.2270	48.1592	52.502,738	57.334,303	62.701,468	75.298,829	90.893,779	110.218	134.213
33	46.1115	50.3540	55.377,841	60.341,310	66.209,527	80.663,770	97.348,164	118.933	143.359
34	48.0338	52.6128	58.370,176	63.433,152	69.807,968	85.000,809	104.183,754	128.238	156.628
35	50.0044	54.9280	60.462,991	66.674,012	73.628,224	90.320,267	111.434,779	138.238	178.218
36	51.9943	57.3014	63.775,944	70.067,633	77.598,313	95.836,322	119.190,866	148.913	187.102
37	54.0349	59.7339	66.174,222	73.497,869	81.702,246	101.628,138	127.264,118	169.337	203.679
38	56.1149	62.2739	69.169,447	77.098,894	85.970,336	107,709,545	135.994,265	172.561	220.313
39	58.2372	64.7829	72.234,332	80.724,906	90.409,149	114.695,023	145.058,458	185.640	233.941
40	60.4019	67.4625	75.401,258	84.550,277	95.025,515	120.739,774	154,761,965	199.635	259.066
41	62.6100	70.0876	78.663,297	88.580,537	99.896,536	127.839,769	165.047,693	214.609	280.781
42	64.8622	72.8398	82.023,196	92.607,371	104.819,507	135.331,751	175.950,544	230.632	304.243
43	67.1594	75.6608	85.483,892	96.848,629	110.012,381	142.933,338	187.597,577	247.776	329.593
44	69.5036	78.5823	89.048,409	101.328,331	115.412,876	151.143,005	199.758,031	266.129	356.949
45	71.8927	81.5161	92.719,891	105.791,672	121.029,392	155.700,155	212,743,513	285.749	386.503
46	74.3308	84.5340	96.501,457	110.494,031	126.870,567	168.685,163	226.809,134	306.751	418.426
47	76.8171	87.6778	100.336,508	115.398,972	132.945,390	178.119,491	241.696,918	329.234	452.909
48	79.3535	90.8525	104.406,395	120.388,256	139.353,306	188.025,306	256.364,528	353.279	490.123
49	81.9405	94.1310	108.549,647	125.601,945	145.833,734	198.436,662	272.938,409	378.998	530.342
50	84.5734	97.4643	112.796,867	130.907,910	152.667,083	209.347,993	290.330,904	406.528	573.779
51	87.2709	100.9311	117.180,773	136.582,837	159.773,767	220.816,395	308.756,056	435.963	620.671
52	90.0164	104.4444	121.636,196	142.343,236	167.164,717	232.856,165	328.281,422	467.504	671.329
53	92.8167	108.055	126.347,689	148.315,493	174.861,306	245.498,973	348.978,307	501.230	726.031
54	95.6730	111.736	131.137,484	154.638,657	182.845,358	258.773,922	370.917,096	537.316	785.114
55	98.5865	115.539	136.071,619	160.546,899	191.159,173	272.712,618	394.173,955	575.928	848.923
56	101.539	119.433	141.153,768	167.509,639	199.895,539	287.348,249	418.823,349	617.243	917.873
57	104.639	123.435	146.388,381	174.445,332	208.797,761	302.718,668	444.951,868	661.450	991.264
58	107.881	127.511	151.780,633	181.559,918	218.143,672	318.851,444	472.649,730	706.732	1063.13
59	110.834	131.699	157.333,438	188.908,356	227.875,688	335.794,017	502.047,717	759.364	1139.45
60	114.051	135.991	163.653,436	196.516,382	237.906,685	353.883,717	533.139,180	813.590	1253.91
61	117.322	140.391	169.945,639	204.394,573	248.530,312	372.662,963	566.115,871	871.466	1354.47
62	120.679	144.901	175.613,391	212.548,797	259.450,725	391.876,049	601.092,824	933.469	1463.82
63	124.092	149.523	181.263,793	220.988,005	270.828,784	412.469,851	638.147,739	999.819	1581.93
64	127.574	154.261	187.701,706	229.722,585	282.661,504	434.033,343	677.436,661	1076.79	1709.48
65	131.126	159.118	194.332,757	238.762,876	294.968,380	456.708,011	719.068,060	1165.75	1847.34
66	134.748	164.095	201.162,746	248.119,577	307.767,115	480.637,311	763.227,833	1258.63	1996.02
67	138.443	169.139	208.197,625	257.803,762	321.077,800	505.699,807	810.021,562	1344.39	2156.71
68	142.212	174.439	215.443,511	267.896,914	334.920,912	531.953,997	859.682,792	1438.63	2330.24
69	146.056	179.779	222.966,858	278.300,833	349.317,748	559.556,965	911.090,169	1537.60	2517.66
70	149.977	185.284	230.984,063	288.937,804	364.290,488	588.528,510	967.932,169	1644.13	2720.08
71	153.977	190.916	238.511,885	300.650,699	379.969,077	618.954,936	1027.608,699	1728.12	2938.68
72	158.057	196.693	246.067,943	311.552,683	396.056,560	650.902,683	1089.628,565	1850.09	3174.78
73	162.318	202.606	253.967,595	323.456,880	412.898,899	684.447,817	1156.901,300	1980.59	3429.76
74	166.662	208.677	262.317,727	335.777,788	430.414,775	719.670,208	1226.366,679	2120.24	3705.14
75	170.791	214.988	271.630,963	348.530,010	448.631,366	750.653,718	1300.948,679	2269.65	4002.55
76	175.027	221.366	281.869,781	361.728,561	467.576,681	795.486,494	1380.006,600	2439.53	4323.76
77	179.711	227.792	292.961,074	375.389,060	487.279,685	846.360,724	1463.803,936	2620.60	4676.06
78	184.305	234.468	304.001,996	389.357,677	507.770,873	897.672,760	1552.634,222	2783.64	5045.31
79	188.932	241.348	311.032,056	404.161,146	529.081,708	954.627,448	1646.799,360	2979.47	5443.94
80	193.771	248.393	318.363,018	419.366,786	551.244,976	971.228,821	1746.599,891	3199.69	5886.93
81	198.467	255.992	326.063,960	434.989,524	574.294,775	1020.790,268	1852.308,884	3413.39	6358.89
82	203.639	263.892	334.964,701	451.296,919	598.246,556	1072.829,725	1964.830,637	3653.22	6868.60
83	208.698	272.556	344.252,947	467.999,154	623.157,829	1127.471,304	2083.412,016	3909.95	7419.08
84	213.866	278.320	355.889,535	485.379,195	649.129,118	1184.844,827	2209.416,737	4184.65	8013.61
85	219.143	286.378	367.886,934	503.367,394	676.090,123	1245.087,068	2342.881,741	4478.57	8655.70
86	224.526	294.433	380.199,650	521.953,358	704.133,728	1308.341,429	2484.569,645	4793.97	9349.16
87	230.017	302.796	392.898,440	541.254,737	738.299,077	1374.738,693	2634.634,384	5129.59	10097.2
88	235.617	311.266	415.983,292	561.198,623	763.631,040	1444.496,418	2793.712,341	5489.66	10906.9
89	241.330	320.150	429.464,955	581.800,605	795.176,892	1517.791,938	2969.338,085	5874.98	11790.4
90	247.156	329.154	443.346,903	603.905,627	827.993,333	1594.607,306	3141.075,187	6287.18	12723.9
91	253.099	338.383	457.649,370	625.317,203	862.102,667	1675.337,665	3330.539,698	6728.26	13742.8
92	259.161	347.842	472.738,351	648.203,353	897.846,773	1769.104,549	3531.279,080	7208.26	14843.2
93	265.345	357.538	487.530,127	671.899,439	934.490,344	1869.109,776	3744.254,465	7705.29	16031.7
94	271.681	367.477	503.176,733	696.496,563	973.869,884	1984.562,303	3969.539,669	8243.68	17315.3
95	278.084	377.564	519.275,925	721.789,816	1012.764,649	2090.940,635	4209.104,349	8823.85	18701.6
96	284.646	388.162	535.339,185	748.043,144	1054.296,634	2143.728,305	4462.656,594	9442.22	20196.6
97	291.339	398.809	552.925,692	775.294,654	1097.467,873	2251.914,615	4731.409,534	10104.5	21815.5
98	298.166	409.778	570.519,468	803.357,517	1142.366,590	2365.510,346	5016.294,701	10812.8	23601.7
99	305.129	421.023	588.698,896	832.475,030	1189.051,254	2484.785,893	5318.571,703	11579.7	25467.0
100	312.332	432.948	607.987,132	862.611,656	1237.623,794	2610.095,156	5636.368,653	12381.6	27424.5

TABLE V.

Showing the probability that a Person of either of the undermentioned ages will live 1 year, and also the probability that a Person will die in that year, formed from the experience of the Friendly Societies for ages 13 to 70, and from the Northampton Mortality Table for ages above 70.

AGE.	Probability of a Person living One Year.	Probability that a Person will die in the Year following each particular Age.	AGE.	Probability of a Person living One Year.	Probability that a Person will die in the Year following each particular Year.	AGE.	Probability of a Person living One Year.	Probability that a Person will die in the Year following each particular Year.
13	.993961	.006039	41	.983165	.016835	69	.938650	.061350
14	.993683	.006317	42	.982548	.017452	70	.935065	.064935
15	.993408	.006592	43	.981917	.018083	71	.930036	.069964
16	.993132	.006868	44	.981273	.018727	72	.925373	.074627
17	.992857	.007143	45	.980620	.019380	73	.919355	.080645
18	.992582	.007418	46	.979960	.020040	74	.912281	.087719
19	.992302	.007698	47	.979296	.020704	75	.903846	.096154
20	.992019	.007981	48	.978541	.021459	76	.897607	.102393
21	.991736	.008264	49	.977679	.022321	77	.891852	.108148
22	.991446	.008554	50	.976690	.023310	78	.887043	.112957
23	.991150	.008850	51	.975669	.024331	79	.882277	.121723
24	.990851	.009149	52	.974555	.025445	80	.865672	.134328
25	.990539	.009461	53	.973404	.026696	81	.852217	.147783
26	.990215	.009785	54	.972145	.027855	82	.835260	.164740
27	.989879	.010121	55	.970674	.029326	83	.809689	.190311
28	.989518	.010482	56	.969136	.030864	84	.794872	.205128
29	.989142	.010858	57	.967532	.032468	85	.779570	.220430
30	.988751	.011249	58	.965870	.034130	86	.765517	.234483
31	.988345	.011655	59	.964158	.035842	87	.747748	.252252
32	.987923	.012077	60	.962406	.037594	88	.746988	.253012
33	.987469	.012531	61	.960474	.039526	89	.741935	.258065
34	.986996	.013004	62	.958506	.041494	90	.739131	.260869
35	.986505	.013495	63	.956332	.043668	91	.705882	.294118
36	.985994	.014006	64	.953917	.046083	92	.666667	.333333
37	.985465	.014535	65	.951456	.048544	93	.562500	.437500
38	.984917	.015083	66	.948718	.051282	94	.444444	.555556
39	.984351	.015649	67	.945692	.054348	95	.250000	.750000
40	.983766	.016234	68	.942197	.057803	96	.000000	1.000000

The above Table is computed from the data heretofore given at page 65, and is that from which all the subsequent Tables are calculated.

TABLE VI.

Showing the numbers living at each year of age, and also the numbers dying in the years following those ages, from age 13 to the extreme of Life.

Age.	Living.	Dying.	Age.	Living.	Dying.	Age.	Living.	Dying.
13	433476	2617	41	323464	5445	69	131252	8052
14	430659	2722	42	318019	5550	70	123200	8000
15	428137	2822	43	312469	5651	71	115200	8000
16	425315	2921	44	306818	5746	72	107200	8000
17	422394	3018	45	301072	5834	73	99200	8000
18	419376	3111	46	295238	5917	74	91200	8000
19	416265	3204	47	289321	5990	75	83200	8000
20	413061	3297	48	283331	6080	76	75200	7700
21	409764	3386	49	277251	6189	77	67500	7300
22	406378	3477	50	271062	6318	78	60200	6800
23	402901	3565	51	264744	6442	79	53400	6500
24	399336	3654	52	258302	6572	80	46900	6300
25	395682	3743	53	251730	6695	81	40600	6000
26	391939	3835	54	245035	6826	82	34600	5700
27	388104	3928	55	238209	6985	83	28900	5500
28	384176	4027	56	231224	7137	84	23400	4800
29	380149	4128	57	224087	7275	85	18600	4100
30	376021	4230	58	216812	7400	86	14500	3400
31	371791	4333	59	209412	7506	87	11100	2800
32	367458	4438	60	201906	7590	88	8300	2100
33	363020	4549	61	194316	7681	89	6200	1600
34	358471	4661	62	186635	7744	90	4600	1200
35	353810	4775	63	178891	7812	91	3400	1000
36	349035	4888	64	171079	7874	92	2400	800
37	344147	5003	65	163195	7922	93	1600	700
38	339144	5115	66	155273	7962	94	900	500
39	334029	5227	67	147311	8006	95	400	300
40	328802	5338	68	139305	8053	96	100	100

Note.—The above Table is formed from the experience of the Friendly Societies, from age 13 to age 70 inclusive. The older ages correspond with the Northampton Mortality Table hereinbefore referred to. The large numbers used have been assumed, in order that the fractional probabilities which may be deduced from the Table shall agree in value with the decimal probabilities given in Table V., from which the above Table was computed. If smaller numbers had been adopted, the agreement between the probabilities deduced from Tables V. and VI. would not have been sufficiently close.

TABLE VII.

Showing the Value of an Annuity on a single Life of every age, from age 13 to age 95, calculated from the data given in Table V.—Interest of Money being taken at 3, 3½, 4, and 5 per cent. per annum.

Age.	3 per Cent.	3½ per Cent.	4 per Cent.	5 per Cent.
13	21.9258	20.0909	19.2690	18.5032
14	21.7208	19.9204	19.1131	18.3602
15	21.5146	19.7487	18.9559	18.2160
16	21.3071	19.5755	18.7972	18.0704
17	21.0981	19.4008	18.6370	17.9232
18	20.8874	19.2243	18.4750	17.7742
19	20.6748	19.0459	18.3111	17.6233
20	20.4602	18.8654	18.1451	17.4704
21	20.2435	18.6828	17.9770	17.3154
22	20.0245	18.4978	17.8066	17.1581
23	19.8032	18.3104	17.6337	16.9984
24	19.5794	18.1205	17.4583	16.8362
25	19.3530	17.9279	17.2802	16.6713
26	19.1240	17.7326	17.0994	16.5037
27	18.8924	17.5346	16.9159	16.3335
28	18.6581	17.3339	16.7297	16.1605
29	18.4214	17.1306	16.5409	15.9850
30	18.1823	16.9248	16.3496	15.8069
31	17.9408	16.7164	16.1557	15.6262
32	17.6969	16.5055	15.9592	15.4429
33	17.4506	16.2920	15.7601	15.2570
34	17.2022	16.0762	15.5586	15.0686
35	16.9517	15.8581	15.3547	14.8778
36	16.6991	15.6377	15.1484	14.6846
37	16.4444	15.4149	14.9397	14.4889
38	16.1876	15.1897	14.7286	14.2907
39	15.9286	14.9621	14.5149	14.0899
40	15.6673	14.7320	14.2986	13.8864
41	15.4036	14.4992	14.0796	13.6802
42	15.1374	14.2636	13.8577	13.4710
43	14.8685	14.0250	13.6327	13.2587
44	14.5966	13.7832	13.4044	13.0430
45	14.3214	13.5379	13.1725	12.8236
46	14.0426	13.2886	12.9366	12.6001
47	13.7597	13.0350	12.6962	12.3721
48	13.4721	12.7764	12.4508	12.1390
49	13.1806	12.5136	12.2010	11.9014
50	12.8860	12.2473	11.9475	11.6600
51	12.5893	11.9785	11.6914	11.4158
52	12.2903	11.7069	11.4323	11.1685
53	11.9895	11.4330	11.1707	10.9185
54	11.6866	11.1565	10.9063	10.6655
55	11.3821	10.8778	10.6395	10.4099
56	11.0778	10.5987	10.3720	10.1534
57	10.7735	10.3190	10.1036	9.8958
58	10.4691	10.0386	9.8342	9.6370

TABLE VII.—(continued.)

Showing the Value of an Annuity on a single Life of every age, from age 13 to age 95, calculated from the data given in Table V.—Interest of Money being taken at 3, 3½, 3¾, 4, and 5 per cent. per annum.

Age.	3 per Cent.	3½ per Cent.	3¾ per Cent.	4 per Cent.	5 per Cent.
59	10.1642	9.7571	9.5635	9.3766	8.6866
60	9.8583	9.4740	9.2910	9.1142	8.4600
61	9.5507	9.1886	9.0160	8.8490	8.2300
62	9.2420	8.9016	8.7390	8.5817	7.9971
63	8.9314	8.6120	8.4592	8.3113	7.7605
64	8.6194	8.3204	8.1772	8.0384	7.5206
65	8.3069	8.0276	7.8937	7.7638	7.2781
66	7.9926	7.7325	7.6076	7.4863	7.0319
67	7.6774	7.4357	7.3195	7.2066	6.7826
68	7.3622	7.1382	7.0304	6.9256	6.5310
69	7.0483	6.8413	6.7415	6.6445	6.2782
70	6.7342	6.5435	6.4515	6.3619	6.023
71	6.4179	6.2428	6.1583	6.0758	5.764
72	6.1037	5.9435	5.8661	5.7904	5.504
73	5.7939	5.6476	5.5769	5.5076	5.245
74	5.4912	5.3580	5.2936	5.2304	4.990
75	5.1997	5.0787	5.0202	4.9626	4.744
76	4.9254	4.8157	4.7625	4.7102	4.511
77	4.6520	4.5528	4.5047	4.4574	4.277
78	4.3725	4.2836	4.2404	4.1979	4.035
79	4.0772	3.9981	3.9596	3.9217	3.776
80	3.7815	3.7115	3.6774	3.6439	3.515
81	3.4994	3.4375	3.4073	3.3777	3.263
82	3.2294	3.1748	3.1481	3.1219	3.020
83	2.9823	2.9340	2.9104	2.8874	2.797
84	2.7938	2.7505	2.7293	2.7084	2.627
85	2.6202	2.5814	2.5624	2.5436	2.471
86	2.4618	2.4272	2.4102	2.3934	2.328
87	2.3124	2.2816	2.2665	2.2516	2.193
88	2.1852	2.1581	2.1448	2.1316	2.080
89	2.0131	1.9902	1.9789	1.9677	1.924
90	1.7948	1.7763	1.7672	1.7582	1.723
91	1.5610	1.4873	1.4806	1.4739	1.447
92	1.1903	1.1808	1.1762	1.1715	1.153
93	.8390	.8332	.8304	.8276	.816
94	.5362	.5331	.5316	.5301	.524
95	.2427	.2415	.2410	.2404	.238

For Ages over 70, at 5 per cent., the foregoing values are given to three places of decimals only; for the reason, that those values were printed in the works of the late Dr. Price and others, and it was not thought necessary to recompute them for the sake of adding another decimal place.

TABLE VIII.

Showing the Value in a single sum, to be paid by Persons of the several ages mentioned, to secure a Life Annuity of 1*l.* from and after the age 70, should the Person live to attain that age; whether such Annuity be payable once in each year, or by twelve equal Monthly Instalments. Also the Annual Premium, payable monthly until age 70, equivalent to the above-mentioned value in a single sum, if the Annuity be payable Monthly. Interest 3 per Cent.

AGE.	Present Value of an Annuity payable Yearly.	Single Premium for Annuity payable Monthly.	Annual Premium for Annuity payable Monthly.	AGE.	Present Value of an Annuity payable Yearly.	Single Premium for Annuity payable Monthly.	Annual Premium for Annuity payable Monthly.
13	·3550	·3791	·0172	40	1·0395	1·1103	·0735
14	·3679	·3929	·0180	41	1·0884	1·1625	·0786
15	·3813	·4072	·0188	42	1·1403	1·2179	·0842
16	·3953	·4223	·0197	43	1·1953	1·2767	·0903
17	·4100	·4379	·0207	44	1·2539	1·3392	·0971
18	·4254	·4543	·0217	45	1·3161	1·4057	·1045
19	·4414	·4714	·0227	46	1·3824	1·4765	·1126
20	·4582	·4893	·0239	47	1·4530	1·5519	·1217
21	·4757	·5081	·0250	48	1·5282	1·6322	·1318
22	·4941	·5277	·0263	49	1·6086	1·7180	·1431
23	·5133	·5482	·0277	50	1·6947	1·8100	·1558
24	·5334	·5697	·0291	51	1·7872	1·9088	·1701
25	·5545	·5922	·0307	52	1·8867	2·0151	·1867
26	·5766	·6158	·0323	53	1·9940	2·1297	·2047
27	·5997	·6405	·0341	54	2·1100	2·2535	·2259
28	·6240	·6665	·0360	55	2·2355	2·3877	·2504
29	·6496	·6938	·0380	56	2·3722	2·5336	·2789
30	·6764	·7224	·0401	57	2·5211	2·6927	·3123
31	·7046	·7526	·0424	58	2·6839	2·8666	·3520
32	·7343	·7843	·0449	59	2·8621	3·0569	·3997
33	·7656	·8177	·0476	60	3·0576	3·2656	·4577
34	·7986	·8529	·0505	61	3·2723	3·4950	·5298
35	·8333	·8901	·0536	62	3·5092	3·7480	·6210
36	·8701	·9293	·0570	63	3·7709	4·0276	·7396
37	·9089	·9708	·0606	64	4·0614	4·3378	·8994
38	·9500	1·0146	·0646	65	4·3855	4·6838	1·1246
39	·9935	1·0611	·0689				



TABLE IX.

Showing the Value in a single sum, to be paid by Persons of the several ages mentioned, to secure a Life Annuity of 1*l*. from and after the age 70, should the Person live to attain that age; whether such Annuity be payable once in each year, or by twelve equal Monthly Instalments. Also the Annual Premium, payable monthly until age 70, equivalent to the above-mentioned value in a single sum, if the Annuity be payable Monthly. Interest  $3\frac{1}{2}$  per Cent.

AGE.	Present Value of an Annuity payable Yearly.	Present Value of an Annuity payable Monthly.	Annual Premium for Annuity payable Monthly.	AGE.	Present Value of an Annuity payable Yearly.	Present Value of an Annuity payable Monthly.	Annual Premium for Annuity payable Monthly.
13	•2617	•2801	•0138	40	•8735	•9347	•0652
14	•2725	•2916	•0145	41	•9190	•9834	•0700
15	•2839	•3038	•0152	42	•9675	1•0352	•0752
16	•2958	•3165	•0160	43	1•0191	1•0905	•0809
17	•3082	•3298	•0168	44	1•0742	1•1495	•0872
18	•3213	•3438	•0177	45	1•1330	1•2124	•0942
19	•3350	•3585	•0186	46	1•1958	1•2796	•1020
20	•3495	•3739	•0196	47	1•2630	1•3515	•1106
21	•3646	•3901	•0207	48	1•3349	1•4284	•1201
22	•3805	•4071	•0219	49	1•4119	1•5108	•1309
23	•3972	•4250	•0231	50	1•4947	1•5994	•1429
24	•4148	•4439	•0244	51	1•5839	1•6948	•1566
25	•4333	•4636	•0257	52	1•6802	1•7979	•1720
26	•4527	•4844	•0272	53	1•7844	1•9094	•1897
27	•4732	•5063	•0288	54	1•8973	2•0302	•2100
28	•4948	•5294	•0305	55	2•0200	2•1615	•2335
29	•5175	•5537	•0323	56	2•1539	2•3047	•2608
30	•5415	•5794	•0343	57	2•3003	2•4614	•2930
31	•5668	•6065	•0364	58	2•4607	2•6330	•3313
32	•5936	•6352	•0387	59	2•6368	2•8215	•3773
33	•6219	•6654	•0412	60	2•8305	3•0288	•4335
34	•6518	•6975	•0438	61	3•0440	3•2572	•5032
35	•6835	•7314	•0467	62	3•2802	3•5100	•5916
36	•7171	•7673	•0498	63	3•5420	3•7901	•7066
37	•7527	•8055	•0532	64	3•8333	4•1019	•8617
38	•7906	•8459	•0568	65	4•1592	4•4505	1•0806
39	•8308	•8890	•0608				

TABLE X.

Showing the Value in a single sum, to be paid by Persons of the several ages mentioned, to secure a Life Annuity of 1*l*. from and after the age 70, should the Person live to attain that age, on the supposition that such Annuity should grow due and be payable *momently*. Interest  $3\frac{1}{2}$  per Cent.

AGE.	Present Value of an Annuity payable Momently.	AGE.	Present Value of an Annuity payable Momently.	AGE.	Present Value of an Annuity payable Momently.	AGE.	Present Value of an Annuity payable Momently.
13	•2817	27	•5094	40	•9403	53	1•9209
14	•2934	28	•5326	41	•9692	54	2•0423
15	•3056	29	•5570	42	1•0114	55	2•1744
16	•3184	30	•5829	43	1•0970	56	2•3185
17	•3318	31	•6101	44	1•1563	57	2•4760
18	•3459	32	•6389	45	1•2196	58	2•6487
19	•3606	33	•6694	46	1•2872	59	2•8383
20	•3762	34	•7016	47	1•3595	60	3•0468
21	•3925	35	•7357	48	1•4369	61	3•2766
22	•4096	36	•7719	49	1•5198	62	3•5309
23	•4276	37	•8103	50	1•6089	63	3•8127
24	•4465	38	•8510	51	1•7049	64	4•1263
25	•4664	39	•8943	52	1•8086	65	4•4770
26	•4873						

This Table is given to show the *limit* of increase in the Value of the Deferred Annuity in question, arising from its being made payable more frequently than once in each year. Such increase will be seen by comparing the several values above given with the first column of Table IX.

TABLE XI.

Showing the Value in a single sum, to be paid by Persons of the several ages mentioned, to secure a Life Annuity of 1*l*. from and after the Age 70, should the Person live to attain that age; whether such Annuity be payable once in each Year, or by Twelve equal Monthly Instalments. Also the Annual Premium payable monthly until age 70, equivalent to the above-mentioned Value in a single sum, if the Annuity be payable Monthly. Interest  $3\frac{1}{2}$  per Cent.

AGE.	Present Premium for Yearly Annuity.	Present Premium for Monthly Annuity.	Annual Premium for Monthly Annuity.	AGE.	Present Premium for Yearly Annuity.	Present Premium for Monthly Annuity.	Annual Premium for Monthly Annuity.
13	•2249	•2409	•0123	40	•8011	•8580	•0614
14	•2347	•2514	•0130	41	•8449	•9049	•0660
15	•2451	•2625	•0136	42	•8916	•9549	•0710
16	•2560	•2742	•0144	43	•9414	1•0083	•0766
17	•2674	•2864	•0152	44	•9947	1•0654	•0827
18	•2794	•2993	•0160	45	1•0517	1•1264	•0895
19	•2921	•3128	•0169	46	1•1127	1•1918	•0970
20	•3054	•3271	•0178	47	1•1781	1•2617	•1053
21	•3194	•3421	•0188	48	1•2481	1•3367	•1147
22	•3341	•3579	•0199	49	1•3233	1•4173	•1251
23	•3496	•3745	•0210	50	1•4042	1•5040	•1369
24	•3660	•3920	•0223	51	1•4917	1•5976	•1502
25	•3832	•4105	•0236	52	1•5862	1•6989	•1653
26	•4014	•4299	•0250	53	1•6886	1•8086	•1826
27	•4206	•4504	•0265	54	1•7998	1•9277	•2025
28	•4408	•4721	•0281	55	1•9208	2•0573	•2255
29	•4622	•4950	•0298	56	2•0531	2•1989	•2523
30	•4848	•5192	•0317	57	2•1979	2•3540	•2839
31	•5087	•5448	•0337	58	2•3568	2•5243	•3215
32	•5340	•5719	•0359	59	2•5316	2•7115	•3667
33	•5608	•6006	•0383	60	2•7242	2•9177	•4219
34	•5892	•6310	•0408	61	2•9368	3•1454	•4905
35	•6193	•6633	•0435	62	3•1723	3•3976	•5775
36	•6513	•6976	•0465	63	3•4337	3•6777	•6909
37	•6854	•7340	•0498	64	3•7252	3•9898	•8437
38	•7216	•7728	•0533	65	4•0516	4•3394	1•0619
39	•7601	•8141	•0572				

TABLE XII.

Showing the Value in a single sum, to be paid by Persons of the several ages mentioned, to secure a Life Annuity of *l.* from and after the age 70, should the Person live to attain that age; whether such Annuity be payable once in each Year, or by twelve equal Monthly Instalments. Also the Annual Premium, payable *monthly* until age 70, equivalent to the above-mentioned Value in a single Sum, if the Annuity be payable Monthly. Interest 4 per Cent.

AGE.	Present value of an Annuity payable Yearly.	Present value of an Annuity payable Monthly.	Annual Premium for Annuity payable Monthly.	AGE.	Present value of an Annuity payable Yearly.	Present value of an Annuity payable Monthly.	Annual Premium for Annuity payable Monthly.
13	·1933	·2073	·0110	40	·7350	·7879	·0578
14	·2023	·2169	·0116	41	·7770	·8329	·0622
15	·2117	·2270	·0122	42	·8219	·8811	·0671
16	·2217	·2376	·0129	43	·8699	·9326	·0725
17	·2321	·2488	·0137	44	·9214	·9878	·0784
18	·2431	·2607	·0144	45	·9765	1·0469	·0850
19	·2548	·2731	·0153	46	1·0357	1·1103	·0923
20	·2670	·2862	·0161	47	1·0991	1·1783	·1004
21	·2799	·3001	·0171	48	1·1673	1·2514	·1095
22	·2935	·3147	·0181	49	1·2406	1·3299	·1197
23	·3079	·3301	·0192	50	1·3197	1·4147	·1312
24	·3231	·3464	·0203	51	1·4052	1·5064	·1441
25	·3391	·3635	·0216	52	1·4979	1·6058	·1589
26	·3561	·3817	·0229	53	1·5984	1·7136	·1758
27	·3740	·4009	·0243	54	1·7078	1·8308	·1953
28	·3929	·4212	·0259	55	1·8270	1·9586	·2178
29	·4129	·4427	·0275	56	1·9575	2·0985	·2441
30	·4342	·4654	·0293	57	2·1006	2·2519	·2751
31	·4567	·4896	·0312	58	2·2580	2·4206	·3120
32	·4805	·5151	·0333	59	2·4312	2·6064	·3565
33	·5059	·5423	·0355	60	2·6225	2·8114	·4108
34	·5328	·5712	·0380	61	2·8339	3·0381	·4783
35	·5614	·6018	·0406	62	3·0686	3·2896	·5639
36	·5918	·6345	·0435	63	3·3295	3·5693	·6755
37	·6242	·6692	·0466	64	3·6208	3·8816	·8262
38	·6588	·7062	·0500	65	3·9475	4·2319	1·0389
39	·6956	·7457	·0537				

TABLE XIII.

Showing the Value, in a single sum, to be paid by Persons of the several ages mentioned, to secure a Life Annuity of 1*l*. from and after the age 65, should the Person live to attain that age; whether such Annuity be payable once in each Year, or by Twelve equal Monthly Instalments. Also the Annual Premium, payable monthly until age 65, equivalent to the above-mentioned Value in a single sum, if the Annuity be payable Monthly. Interest  $3\frac{1}{2}$  per Cent.

AGE.	Present Value of an Annuity payable Yearly.	Present Value of an Annuity payable Monthly.	Annual Premium of an Annuity payable Monthly.	AGE.	Present Value of an Annuity payable Yearly.	Present Value of an Annuity payable Monthly.	Annual Premium for an Annuity payable Monthly.
13	·5052	·5340	·0266	37	1·4529	1·5358	·1065
14	·5260	·5561	·0279	38	1·5259	1·6130	·1142
15	·5479	·5792	·0294	39	1·6035	1·6950	·1227
16	·5708	·6034	·0309	40	1·6860	1·7822	·1321
17	·5949	·6289	·0326	41	1·7738	1·8730	·1424
18	·6201	·6555	·0343	42	1·8673	1·9739	·1538
19	·6466	·6836	·0362	43	1·9670	2·0793	·1665
20	·6745	·7130	·0381	44	2·0733	2·1917	·1806
21	·7037	·7439	·0403	45	2·1868	2·3117	·1964
22	·7344	·7763	·0425	46	2·3081	2·4399	·2142
23	·7667	·8104	·0449	47	2·4377	2·5769	·2343
24	·8006	·8463	·0475	48	2·5764	2·7235	·2571
25	·8362	·8840	·0503	49	2·7251	2·8806	·2831
26	·8738	·9237	·0532	50	2·8848	3·0495	·3131
27	·9133	·9654	·0564	51	3·0571	3·2316	·3479
28	·9549	1·0094	·0599	52	3·2430	3·4281	·3887
29	·9988	1·0558	·0635	53	3·4441	3·6407	·4369
30	1·0451	1·1048	·0675	54	3·6620	3·8711	·4946
31	1·0940	1·1565	·0718	55	3·8988	4·1214	·5647
32	1·1457	1·2111	·0765	56	4·1572	4·3945	·6514
33	1·2003	1·2688	·0815	57	4·4397	4·6932	·7610
34	1·2580	1·3298	·0870	58	4·7493	5·0204	·9030
35	1·3192	1·3945	·0929	59	5·0892	5·3798	1·0937
36	1·3841	1·4631	·0994	60	5·4632	5·7750	1·3618

TABLE XIV.

Showing the Value, in a single sum, to be paid by Persons of the several ages mentioned, to secure a Life Annuity of 1*l*. from and after the age 65, should the Person live to attain that age; whether such Annuity be payable once in each Year, at the end of it, or by Twelve equal Monthly Instalments. Also the Annual Premium, payable *monthly* until age 65, equivalent to the above-mentioned Value in a single sum, if the Annuity be payable Monthly. Interest  $3\frac{1}{2}$  per Cent.

AGE.	Present Value of an Annuity payable Yearly.	Present Value of an Annuity payable Monthly.	Annual Premium for an Annuity payable Monthly.	AGE.	Present Value of an Annuity payable Yearly.	Present Value of an Annuity payable Monthly.	Annual Premium for an Annuity payable Monthly.
13	.4382	.4636	.0240	37	1.3353	1.4128	.1004
14	.4574	.4839	.0252	38	1.4058	1.4874	.1079
15	.4775	.5053	.0266	39	1.4809	1.5668	.1162
16	.4987	.5277	.0281	40	1.5608	1.6514	.1252
17	.5210	.5513	.0296	41	1.6461	1.7416	.1352
18	.5444	.5760	.0312	42	1.7370	1.8379	.1463
19	.5691	.6021	.0330	43	1.8342	1.9407	.1586
20	.5950	.6293	.0349	44	1.9380	2.0505	.1724
21	.6223	.6584	.0369	45	2.0491	2.1680	.1878
22	.6510	.6888	.0390	46	2.1679	2.2938	.2051
23	.6812	.7208	.0413	47	2.2952	2.4285	.2247
24	.7131	.7545	.0437	48	2.4316	2.5728	.2469
25	.7467	.7900	.0464	49	2.5781	2.7278	.2724
26	.7820	.8275	.0492	50	2.7359	2.8947	.3017
27	.8194	.8670	.0523	51	2.9062	3.0750	.3358
28	.8588	.9087	.0555	52	3.0904	3.2698	.3757
29	.9005	.9527	.0591	53	3.2900	3.4810	.4229
30	.9445	.9993	.0629	54	3.5066	3.7102	.4795
31	.9910	1.0486	.0670	55	3.7424	3.9597	.5483
32	1.0403	1.1007	.0715	56	4.0000	4.2323	.6334
33	1.0925	1.1560	.0763	57	4.2822	4.5308	.7410
34	1.1479	1.2145	.0816	58	4.5919	4.8585	.8806
35	1.2066	1.2767	.0873	59	4.9324	5.2188	1.0680
36	1.2690	1.3427	.0936	60	5.3076	5.6158	1.3318

TABLE XV.

Showing the Value, in a single sum, to be paid by Persons of the several ages mentioned, to secure a Life Annuity of 1*l*. from and after the age 65, should the Person live to attain that age; whether such Annuity be payable once in each Year, at the end of it, or by Twelve equal Monthly Instalments. Also the Annual Premium, payable monthly until age 65, equivalent to the above-mentioned Value in a single sum, if the Annuity be payable Monthly. Interest 4 per Cent.

AGE.	Present Value of an Annuity payable Yearly.	Present Value of an Annuity payable Monthly.	Annual Premium for an Annuity payable Monthly.	AGE.	Present Value of an Annuity payable Yearly.	Present Value of an Annuity payable Monthly.	Annual Premium for an Annuity payable Monthly.
13	.3803	.4027	.0216	37	1.2277	1.3002	.0947
14	.3979	.4214	.0228	38	1.2957	1.3722	.1019
15	.4164	.4410	.0241	39	1.3681	1.4489	.1099
16	.4360	.4617	.0254	40	1.4455	1.5308	.1187
17	.4565	.4835	.0269	41	1.5281	1.6183	.1284
18	.4782	.5064	.0284	42	1.6165	1.7119	.1392
19	.5010	.5306	.0301	43	1.7110	1.8120	.1511
20	.5251	.5561	.0319	44	1.8122	1.9192	.1645
21	.5505	.5830	.0338	45	1.9206	2.0340	.1795
22	.5773	.6114	.0358	46	2.0369	2.1572	.1964
23	.6056	.6413	.0380	47	2.1617	2.2893	.2155
24	.6354	.6730	.0403	48	2.2957	2.4313	.2372
25	.6670	.7063	.0428	49	2.4399	2.5840	.2621
26	.7003	.7416	.0455	50	2.5954	2.7487	.2908
27	.7355	.7789	.0484	51	2.7637	2.9268	.3241
28	.7727	.8183	.0515	52	2.9459	3.1198	.3632
29	.8121	.8601	.0549	53	3.1437	3.3293	.4095
30	.8539	.9043	.0586	54	3.3588	3.5571	.4650
31	.8982	.9512	.0625	55	3.5933	3.8054	.5325
32	.9451	1.0009	.0668	56	3.8499	4.0772	.6161
33	.9949	1.0536	.0715	57	4.1314	4.3753	.7217
34	1.0478	1.1097	.0765	58	4.4408	4.7030	.8589
35	1.1041	1.1693	.0821	59	4.7817	5.0639	1.0432
36	1.1640	1.2327	.0881	60	5.1590	5.4635	1.3032

TABLE XVI.

Showing the Value, in a single sum, to be paid by Persons of the several ages mentioned, to secure a Life Annuity of £1. from and after the age 60, should the Person live to attain that age; whether such Annuity be payable once in each Year, at the end of it, or by Twelve equal Monthly Instalments. Also the Annual Premium, payable monthly until age 60, equivalent to the above-mentioned Value in a single sum, if the Annuity be payable Monthly.—Interest  $3\frac{1}{4}$  per Cent.

AGE.	Present Value of an Annuity payable Yearly.	Present Value of an Annuity payable Monthly.	Annual Premium for an Annuity payable Monthly.	AGE.	Present Value of an Annuity payable Yearly.	Present Value of an Annuity payable Monthly.	Annual Premium for an Annuity payable Monthly.
13	.8760	.9184	.0466	35	2.2877	2.3984	.1713
14	.9122	.9563	.0490	36	2.4002	2.5163	.1842
15	.9501	.9961	.0516	37	2.5195	2.6414	.1984
16	.9899	1.0378	.0544	38	2.6461	2.7741	.2141
17	1.0316	1.0816	.0573	39	2.7807	2.9152	.2316
18	1.0754	1.1275	.0605	40	2.9238	3.0652	.2517
19	1.1214	1.1756	.0639	41	3.0760	3.2248	.2729
20	1.1696	1.2262	.0674	42	3.2382	3.3949	.2975
21	1.2203	1.2794	.0713	43	3.4111	3.5761	.3254
22	1.2736	1.3352	.0754	44	3.5955	3.7694	.3571
23	1.3295	1.3938	.0798	45	3.7923	3.9758	.3935
24	1.3883	1.4555	.0846	46	4.0026	4.1963	.4356
25	1.4502	1.5203	.0897	47	4.2274	4.4319	.4847
26	1.5153	1.5886	.0952	48	4.4679	4.6840	.5425
27	1.5838	1.6604	.1011	49	4.7257	4.9543	.6116
28	1.6560	1.7361	.1076	50	5.0028	5.2448	.6952
29	1.7321	1.8159	.1145	51	5.3014	5.5579	.7983
30	1.8124	1.9001	.1221	52	5.6238	5.8959	.9281
31	1.8972	1.9890	.1303	53	5.9726	6.2616	1.0960
32	1.9868	2.0829	.1392	54	6.3506	6.6578	1.3209
33	2.0814	2.1821	.1489	55	6.7612	7.0882	1.6366
34	2.1816	2.2872	.1596				



TABLE XVII.

Showing the Value, in a single sum, to be paid by Persons of the several ages mentioned, to secure a Life Annuity of 1*l*. from and after the age 60, should the Person live to attain that age; whether such Annuity be payable once in each Year, at the end of it, or by Twelve equal Monthly Instalments. Also the Annual Premium, payable monthly until age 60, equivalent to the above-mentioned Value in a single Sum, if the Annuity be payable Monthly.—Interest  $3\frac{1}{2}$  per Cent.

AGE.	Present Value of an Annuity payable Yearly.	Present Value of an Annuity payable Monthly.	Annual Premium for an Annuity payable Monthly.	AGE.	Present Value of an Annuity payable Yearly.	Present Value of an Annuity payable Monthly.	Annual Premium of an Annuity payable Monthly.
13	.7670	.8019	.0423	35	2.1122	2.2164	.1620
14	.8006	.8401	.0447	36	2.2214	2.3310	.1745
15	.8359	.8772	.0471	37	2.3374	2.4527	.1883
16	.8730	.9161	.0497	38	2.4609	2.5823	.2035
17	.9120	.9570	.0525	39	2.5923	2.7201	.2205
18	.9530	1.0000	.0555	40	2.7322	2.8670	.2395
19	.9962	1.0453	.0587	41	2.8815	3.0236	.2607
20	1.0415	1.0929	.0621	42	3.0407	3.1907	.2847
21	1.0893	1.1430	.0658	43	3.2103	3.3691	.3118
22	1.1396	1.1958	.0697	44	3.3925	3.5599	.3428
23	1.1925	1.2513	.0739	45	3.5869	3.7638	.3783
24	1.2483	1.3098	.0785	46	3.7950	3.9822	.4194
25	1.3070	1.3715	.0834	47	4.0178	4.2160	.4673
26	1.3690	1.4365	.0886	48	4.2566	4.4665	.5239
27	1.4344	1.5051	.0943	49	4.5130	4.7357	.5914
28	1.5034	1.5775	.1005	50	4.7892	5.0254	.6733
29	1.5763	1.6540	.1072	51	5.0874	5.3383	.7743
30	1.6533	1.7349	.1145	52	5.4098	5.6766	.9014
31	1.7348	1.8204	.1224	53	5.7592	6.0433	1.0660
32	1.8211	1.9109	.1310	54	6.1384	6.4412	1.2865
33	1.9125	2.0068	.1404	55	6.5511	6.8742	1.5961
34	2.0094	2.1085	.1507				

TABLE XVIII.

Showing the Value, in a single sum, to be paid by Persons of the several ages mentioned, to secure a Life Annuity of 1*l*. from and after the age 60, should the Person live to attain that age; whether such Annuity be payable once in each Year, at the end of it, or by Twelve equal Monthly Instalments. Also the Annual Premium, payable monthly until age 60, equivalent to the above-mentioned Value is a single sum, if the Annuity be payable Monthly.—Interest 4 per Cent.

AGE.	Present Value of an Annuity payable Yearly.	Present Value of an Annuity payable Monthly.	Annual Premium for an Annuity payable Monthly.	AGE.	Present Value of an Annuity payable Yearly.	Present Value of an Annuity payable Monthly.	Annual Premium for an Annuity payable Monthly.
13	.6719	.7057	.0385	35	1.9510	2.0491	.1533
14	.7031	.7384	.0407	36	2.0568	2.1603	.1653
15	.7358	.7728	.0430	37	2.1695	2.2786	.1787
16	.7704	.8091	.0454	38	2.2895	2.4047	.1935
17	.8067	.8473	.0481	39	2.4176	2.5392	.2100
18	.8450	.8875	.0509	40	2.5543	2.6827	.2284
19	.8854	.9299	.0540	41	2.7003	2.8361	.2491
20	.9279	.9746	.0572	42	2.8564	3.0000	.2724
21	.9728	1.0217	.0607	43	3.0234	3.1754	.2989
22	1.0202	1.0715	.0644	44	3.2022	3.3633	.3290
23	1.0701	1.1239	.0685	45	3.3939	3.5645	.3637
24	1.1229	1.1821	.0730	46	3.5994	3.7804	.4038
25	1.1786	1.2378	.0775	47	3.8199	4.0120	.4507
26	1.2374	1.2996	.0825	48	4.0567	4.2607	.5060
27	1.2996	1.3650	.0880	49	4.3115	4.5283	.5721
28	1.3654	1.4341	.0939	50	4.5863	4.8170	.6523
29	1.4351	1.5073	.1004	51	4.8836	5.1292	.7512
30	1.5089	1.5848	.1073	52	5.2056	5.4674	.8758
31	1.5871	1.6669	.1150	53	5.5552	5.8345	1.0371
32	1.6700	1.7540	.1233	54	5.9352	6.2337	1.2534
33	1.7581	1.8465	.1323	55	6.3495	6.6688	1.5572
34	1.8516	1.9447	.1423				

TABLE XIX.

Showing the Value, in a single sum, to be paid by Persons of the several ages mentioned, to secure a Life Annuity of 1*l.* from and after the age 55, should the Person live to attain that age; whether such Annuity be payable once in each Year, at the end of it, or by Twelve equal Monthly Instalments. Also the Annual Premium, payable monthly until age 55, equivalent to the above-mentioned Value in a single sum, if the Annuity be payable Monthly. Interest  $3\frac{1}{4}$  per Cent.

AGE.	Present Value of an Annuity payable Yearly.	Present Value of an Annuity payable Monthly.	Annual Premium for an Annuity payable Monthly.	AGE.	Present Value of an Annuity payable Yearly.	Present Value of an Annuity payable Monthly.	Annual Premium for an Annuity payable Monthly.
13	1.4094	1.4688	.0766	32	3.1964	3.3311	.2429
14	1.4676	1.5294	.0803	33	3.3487	3.4898	.2615
15	1.5286	1.5930	.0852	34	3.5099	3.6578	.2822
16	1.5926	1.6597	.0899	35	3.6807	3.8357	.3053
17	1.6598	1.7297	.0950	36	3.8616	4.0243	.3311
18	1.7302	1.8031	.1004	37	4.0535	4.2243	.3601
19	1.8042	1.8802	.1062	38	4.2573	4.4366	.3928
20	1.8818	1.9611	.1124	39	4.4737	4.6622	.4300
21	1.9633	2.0461	.1191	40	4.7039	4.9021	.4727
22	2.0490	2.1353	.1263	41	4.9489	5.1574	.5218
23	2.1390	2.2291	.1341	42	5.2093	5.4293	.5791
24	2.2336	2.3277	.1425	43	5.4890	5.7192	.6464
25	2.3332	2.4315	.1516	44	5.7846	6.0283	.7266
26	2.4379	2.5406	.1615	45	6.1014	6.3584	.8235
27	2.5481	2.6555	.1722	46	6.4397	6.7110	.9427
28	2.6643	2.7705	.1839	47	6.8014	7.0879	1.0924
29	2.7868	2.9042	.1967	48	7.1883	7.4911	1.2856
30	2.9160	3.0388	.2106	49	7.6030	7.9233	1.5439
31	3.0523	3.1809	.2260	50	8.0498	8.3879	1.0059

TABLE XX.

Showing the Value, in a single sum, to be paid by Persons of the several ages mentioned, to secure a Life Annuity of 1*l*. from and after the age 55, should the Person live to attain that age; whether such Annuity be payable once in each Year, at the end of it, or by Twelve equal Monthly Instalments. Also the Annual Premium, payable *monthly* until age 55, equivalent to the above-mentioned Value, in a single sum, if the Annuity be payable Monthly. Interest  $3\frac{1}{2}$  per Cent.

AGE.	Present Value of an Annuity payable Yearly.	Present Value of an Annuity payable Monthly.	Annual Premium for an Annuity payable Monthly.	AGE.	Present Value of an Annuity payable Yearly.	Present Value of an Annuity payable Monthly.	Annual Premium for an Annuity payable Monthly.
13	1.2769	1.2994	.0702	32	3.0318	3.0850	.2300
14	1.3329	1.3563	.0741	33	3.1840	3.2399	.2480
15	1.3917	1.4161	.0783	34	3.3453	3.4040	.2681
16	1.4534	1.4789	.0828	35	3.5165	3.5782	.2905
17	1.5183	1.5450	.0876	36	3.6982	3.7632	.3155
18	1.5866	1.6145	.0928	37	3.8914	3.9597	.3437
19	1.6584	1.6875	.0983	38	4.0969	4.1688	.3755
20	1.7340	1.7644	.1043	39	4.3156	4.3914	.4118
21	1.8135	1.8453	.1107	40	4.5486	4.6285	.4533
22	1.8971	1.9305	.1176	41	4.7971	4.8813	.5012
23	1.9853	2.0201	.1250	42	5.0622	5.1511	.5570
24	2.0781	2.1146	.1331	43	5.3453	5.4392	.6227
25	2.1759	2.2141	.1419	44	5.6479	5.7471	.7010
26	2.2791	2.3191	.1514	45	5.9715	6.0764	.7956
27	2.3879	2.4299	.1617	46	6.3179	6.4288	.9122
28	2.5028	2.5468	.1730	47	6.6889	6.8063	1.0583
29	2.6242	2.6702	.1853	48	7.0864	7.2108	1.2472
30	2.7525	2.8008	.1988	49	7.5134	7.6453	1.4999
31	2.8882	2.9389	.2136	50	7.9731	8.1131	1.8540

TABLE XXI.

Showing the Value, in a single sum, to be paid by Persons of the several ages men, tioned to secure a Life Annuity of 1*l*. from and after the age 55, should the Person live to attain that Age. Whether such Annuity be payable once in each Year, or by twelve equal Monthly Instalments. Also the Annual Premium, payable Monthly until age 55, equivalent to the above-mentioned Value, in a single sum, if the Annuity be made payable Monthly. Interest 4 per Cent.

AGE.	Present Premium for Yearly Annuity.	Present Premium for Monthly Annuity.	Annual Premium for Monthly Annuity.	AGE.	Present Premium for Yearly Annuity.	Present Premium for Monthly Annuity.	Annual Premium for Monthly Annuity.
13	1.1016	1.1501	.0643	32	2.7380	2.8585	.2178
14	1.1527	1.2034	.0680	33	2.8823	3.0092	.2353
15	1.2064	1.2595	.0720	34	3.0357	3.1693	.2547
16	1.2630	1.3186	.0762	35	3.1987	3.3395	.2765
17	1.3226	1.3808	.0808	36	3.3721	3.5206	.3008
18	1.3854	1.4464	.0857	37	3.5568	3.7134	.3281
19	1.4516	1.5155	.0910	38	3.7537	3.9189	.3591
20	1.5213	1.5883	.0967	39	3.9636	4.1381	.3944
21	1.5949	1.6651	.1028	40	4.1877	4.3720	.4348
22	1.6725	1.7462	.1095	41	4.4270	4.6219	.4815
23	1.7544	1.8317	.1166	42	4.6830	4.8891	.5359
24	1.8409	1.9220	.1244	43	4.9568	5.1750	.6000
25	1.9322	2.0173	.1328	44	5.2500	5.4811	.6764
26	2.0287	2.1180	.1419	45	5.5642	5.8091	.7688
27	2.1307	2.2245	.1518	46	5.9011	6.1609	.8826
28	2.2386	2.3371	.1627	47	6.2627	6.5384	1.0256
29	2.3528	2.4564	.1746	48	6.6509	6.9437	1.2104
30	2.4738	2.5827	.1876	49	7.0686	7.3798	1.4375
31	2.6020	2.7165	.2020	50	7.5192	7.8502	1.8041

TABLE XXII.

Showing the single Premiums to be paid by Persons of the undermentioned Ages, for assuring 100*l.* at the end of the Year in which they may respectively die; and also the equivalent Annual Premiums, payable in twelve equal Monthly instalments. Interest 3 and 3½ per Cent.

Age.	Single Premium, 3 per Cent.	Annual Premium, 3 per Cent.	Single Premium, 3½ per Cent.	Annual Premium, 3½ per Cent.	Age.	Single Premium, 3 per Cent.	Annual Premium, 3 per Cent.	Single Premium, 3½ per Cent.	Annual Premium, 3½ per Cent.
13	33.2258	1.4788	28.6782	1.3900	42	52.9979	3.3802	46.3840	3.2680
14	33.8229	1.5193	29.2547	1.4297	43	53.7811	3.4900	49.1908	3.3770
15	34.4235	1.5607	29.8354	1.4704	44	54.5730	3.6050	50.0085	3.4910
16	35.0279	1.6032	30.4211	1.5122	45	55.3746	3.7257	50.8381	3.6108
17	35.6366	1.6468	31.0118	1.5551	46	56.1866	3.8526	51.6811	3.7368
18	36.2503	1.6916	31.6087	1.5992	47	57.0106	3.9864	52.5386	3.8698
19	36.8695	1.7378	32.2120	1.6445	48	57.8483	4.1280	53.4131	4.0106
20	37.4946	1.7853	32.8223	1.6913	49	58.6973	4.2775	54.3019	4.1594
21	38.1257	1.8343	33.4398	1.7394	50	59.5553	4.4353	55.2024	4.3164
22	38.7636	1.8848	34.0654	1.7892	51	60.4195	4.6013	56.1114	4.4817
23	39.4082	1.9370	34.6991	1.8406	52	61.2904	4.7764	57.0299	4.6561
24	40.0600	1.9910	35.3414	1.8938	53	62.1665	4.9610	57.9561	4.8399
25	40.7194	2.0468	35.9927	1.9488	54	63.0487	5.1560	58.8911	5.0342
26	41.3854	2.1045	36.6531	2.0057	55	63.9356	5.3621	59.8335	5.2396
27	42.0610	2.1643	37.3226	2.0647	56	64.8220	5.5788	60.7774	5.4556
28	42.7434	2.2263	38.0014	2.1259	57	65.7083	5.8071	61.7232	5.6832
29	43.4328	2.2904	38.6888	2.1892	58	66.5949	6.0482	62.6714	5.9235
30	44.1292	2.3568	39.3847	2.2549	59	67.4829	6.3034	63.6234	6.1778
31	44.8326	2.4257	40.0895	2.3229	60	68.3739	6.5745	64.5807	6.4480
32	45.5430	2.4971	40.8027	2.3935	61	69.2698	6.8636	65.5458	6.7363
33	46.2604	2.5711	41.5246	2.4668	62	70.1689	7.1721	66.5163	7.0438
34	46.9839	2.6479	42.2544	2.5427	63	71.0736	7.5028	67.4956	7.3737
35	47.7135	2.7275	42.9920	2.6215	64	71.9823	7.8575	68.4817	7.7276
36	48.4492	2.8102	43.7373	2.7033	65	72.8925	8.2378	69.4719	8.1072
37	49.1911	2.8960	44.4907	2.7883	66	73.8080	8.6485	70.4698	8.5169
38	49.9390	2.9851	45.2523	2.8766	67	74.7261	9.0919	71.4735	8.9596
39	50.6934	3.0779	46.0219	2.9684	68	75.6441	9.5706	72.4795	9.4377
40	51.4545	3.1745	46.8000	3.0641	69	76.5584	10.0869	73.4836	9.9532
41	52.2225	3.2751	47.5873	3.1639	70	77.4732	10.6481	74.4906	10.5137

TABLE XXIII.

Showing the single Premiums to be paid by Persons of the undermentioned Ages, for assuring 100*l*. at the end of the Year in which they may respectively die; and also the equivalent Annual Premiums, payable in twelve equal Monthly instalments. Interest 4 and 5 per Cent.

Age.	Single Premium, 4 per Cent.	Annual Premium, 4 per Cent.	Single Premium, 5 per Cent.	Annual Premium, 5 per Cent.	Age.	Single Premium, 4 per Cent.	Annual Premium, 4 per Cent.	Single Premium, 5 per Cent.	Annual Premium, 5 per Cent.
13	24.9877	1.3120	19.4767	1.1839	42	44.3423	3.1645	37.6532	2.9805
14	25.5377	1.3511	19.9671	1.2213	43	45.1588	3.2723	38.4643	3.0860
15	26.0923	1.3910	20.4629	1.2597	44	45.9985	3.3853	39.2895	3.1967
16	26.6523	1.4320	20.9648	1.2990	45	46.8323	3.5040	40.1329	3.3130
17	27.2185	1.4741	21.4738	1.3394	46	47.6919	3.6291	40.9962	3.4357
18	27.7915	1.5174	21.9905	1.3810	47	48.5689	3.7616	41.8814	3.5654
19	28.3719	1.5619	22.5152	1.4238	48	49.4654	3.9009	42.7910	3.7031
20	28.9600	1.6078	23.0486	1.4679	49	50.3792	4.0488	43.7229	3.8489
21	29.5562	1.6552	23.5910	1.5135	50	51.3077	4.2050	44.6743	4.0031
22	30.1612	1.7040	24.1438	1.5605	51	52.2469	4.3694	45.6410	4.1655
23	30.7754	1.7546	24.7071	1.6093	52	53.1981	4.5429	46.6243	4.3369
24	31.3992	1.8069	25.2814	1.6597	53	54.1596	4.7259	47.6229	4.5180
25	32.0335	1.8610	25.8671	1.7120	54	55.1327	4.9194	48.6381	4.7095
26	32.6781	1.9171	26.4648	1.7662	55	56.1158	5.1240	49.6681	4.9121
27	33.3327	1.9753	27.0743	1.8224	56	57.1023	5.3392	50.7057	5.1252
28	33.9981	2.0356	27.6962	1.8802	57	58.0931	5.5659	51.7519	5.3498
29	34.6731	2.0980	28.3300	1.9414	58	59.0885	5.8052	52.8071	5.5868
30	35.3581	2.1628	28.9752	2.0043	59	60.0900	6.0586	53.8733	5.8379
31	36.0531	2.2299	29.6324	2.0695	60	61.0992	6.3277	54.9524	6.1047
32	36.7581	2.2996	30.3014	2.1372	61	62.1192	6.6150	56.0476	6.3897
33	37.4731	2.3719	30.9829	2.2075	62	63.1473	6.9215	57.1567	6.6938
34	38.1977	2.4470	31.6757	2.2805	63	64.1873	7.2504	58.2833	7.0203
35	38.9315	2.5248	32.3800	2.3563	64	65.2368	7.6034	59.4257	7.3709
36	39.6746	2.6057	33.0962	2.4351	65	66.2931	7.9819	60.5805	7.7472
37	40.4273	2.6897	33.8243	2.5170	66	67.3604	8.3908	61.7529	8.1538
38	41.1896	2.7770	34.5643	2.6021	67	68.4362	8.8325	62.9400	8.5934
39	41.9619	2.8679	35.3171	2.6908	68	69.5169	9.3096	64.1381	9.0685
40	42.7446	2.9626	36.0829	2.7833	69	70.5981	9.8243	65.3419	9.5812
41	43.5377	3.0613	36.8619	2.8797	70	71.6850	10.3830	66.5572	10.1388

TABLE XXIV.

Showing the single Premiums payable by Persons of the undermentioned Ages for assuring £100 at the end of the Year in which they may respectively die; and also the equivalent Annual Premiums; payable, in twelve equal Monthly instalments, up to the age 70 only.—Interest  $3\frac{1}{2}$  per Cent.

Age.	Single Premiums.	Annual Premiums.	Age.	Single Premiums.	Annual Premiums.
13	26.7383	1.3663	42	46.2975	3.4436
14	27.3021	1.4071	43	47.1108	3.5782
15	27.8705	1.4469	44	47.9358	3.7216
16	28.4437	1.4920	45	48.7740	3.8747
17	29.0228	1.5362	46	49.6267	4.0392
18	29.6083	1.5819	47	50.4956	4.2164
19	30.2010	1.6290	48	51.3826	4.4084
20	30.8008	1.6776	49	52.2864	4.6168
21	31.4083	1.7280	50	53.2017	4.8431
22	32.0245	1.7801	51	54.1275	5.0894
23	32.6494	1.8342	52	55.0639	5.3590
24	33.2834	1.8903	53	56.0094	5.6554
25	33.9271	1.9486	54	56.9650	5.9836
26	34.5806	2.0092	55	57.9295	6.3493
27	35.2437	2.0723	56	58.8966	6.7583
28	35.9168	2.1380	57	59.8667	7.2205
29	36.5990	2.2064	58	60.8403	7.7489
30	37.2906	2.2777	59	61.8186	8.3611
31	37.9914	2.3520	60	62.8035	9.0823
32	38.7016	2.4296	61	63.7978	9.9494
33	39.4213	2.5107	62	64.7989	11.0146
34	40.1497	2.5955	63	65.8100	12.3631
35	40.8868	2.6841	64	66.8294	14.1318
36	41.6324	2.7769	65	67.8540	16.5663
37	42.3864	2.8742	66	68.8883	20.1581
38	43.1498	2.9764	67	69.9296	26.0300
39	43.9221	3.0839	68	70.9746	37.4575
40	44.7038	3.1972	69	72.0185	69.8125*
41	45.4954	3.3169	70	73.0667	

\* The Annual Premium, although in this case payable for one year only, is properly less than the single Premium, for the reason that one Monthly payment is supposed to be made at the *beginning* of the year and one payment at the *end* of it; so that thirteen Monthly payments would be required from the assurer or contributor to a Friendly Society.



TABLE XXV.

Showing the single Premiums to be paid by Persons of the under-mentioned Ages,  
for assuring an Allowance of 1*l*. per Week during Sickness up to the Age 70.—  
Interest 3, 3½, 3¾, and 4 per Cent.

Age.	Single Premium, 3 per Cent.	Single Premium, 3½ per Cent.	Single Premium, 3¾ per Cent.	Single Premium, 4 per Cent.	Age.	Single Premium, 3 per Cent.	Single Premium, 3½ per Cent.	Single Premium, 3¾ per Cent.	Single Premium, 4 per Cent.
20	27.0881	24.1650	22.8758	21.6872	45	36.6475	34.3562	33.2849	32.2597
21	27.3314	24.4164	23.1280	21.9386	46	37.0949	34.8600	33.8125	32.8084
22	27.5878	24.6815	23.3943	22.2043	47	37.5280	35.3533	34.3315	33.3504
23	27.8571	24.9604	23.6746	22.4844	48	37.9426	35.8322	34.8380	33.8820
24	28.1392	25.2529	23.9690	22.7788	49	38.3367	36.2947	35.3301	34.4012
25	28.4337	25.5588	24.2773	23.0875	50	38.7078	36.7381	35.8054	34.9056
26	28.7407	25.8784	24.5996	23.4107	51	39.0532	37.1599	36.2610	35.3925
27	29.0602	26.2116	24.9361	23.7485	52	39.3651	37.5524	36.6896	35.8544
28	29.3923	26.5586	25.2870	24.1012	53	39.6366	37.9088	37.0843	36.2848
29	29.7375	26.9200	25.6528	24.4693	54	39.8572	38.2187	37.4348	36.6734
30	30.0958	27.2960	26.0338	24.8533	55	40.0162	38.4715	37.7305	37.0097
31	30.4677	27.6870	26.4305	25.2537	56	40.1034	38.6568	37.9611	37.2832
32	30.8523	28.0924	26.8423	25.6599	57	40.0985	38.7544	38.1054	37.4739
33	31.2491	28.5117	27.2687	26.1014	58	39.9751	38.7381	38.1401	37.5555
34	31.6578	28.9446	27.7097	26.5483	59	39.7001	38.5746	38.0290	37.4948
35	32.0779	29.3908	28.1649	27.0102	60	39.2316	38.2217	37.7308	37.2494
36	32.5088	29.8498	28.6339	27.4868	61	38.5158	37.6253	37.1913	36.7649
37	32.9501	30.3214	29.1165	27.9779	62	37.4887	36.7205	36.3451	35.9756
38	33.4001	30.8041	29.6112	28.4822	63	36.0597	35.4156	35.1001	34.7890
39	33.8574	31.2964	30.1167	28.9955	64	34.1176	33.5978	33.3425	33.0903
40	34.3204	31.7969	30.6317	29.5255	65	31.5187	31.1206	30.9249	30.7311
41	34.7873	32.3041	31.1547	30.0618	66	28.0711	27.7895	27.6505	27.5127
42	35.2564	32.8164	31.6842	30.6060	67	23.5385	23.3627	23.2757	23.1892
43	35.7249	33.3312	32.2176	31.1555	68	17.6209	17.5338	17.4906	17.4475
44	36.1897	33.8455	32.7522	31.7077	69	9.9369	9.9125	9.9004	9.8882

TABLE XXVI.

A Table of Annual Premiums payable, in equal monthly instalments, up to Age 70, by Persons of the under-mentioned Ages, to assure an Allowance of 1*l*. per Week during Sickness up to the Age 70.—Interest 3, 3½, 3¾, and 4 per Cent.

Age.	Annual Premium, 3 per Cent.	Annual Premium, 3½ per Cent.	Annual Premium, 3¾ per Cent.	Annual Premium, 4 per Cent.	Age.	Annual Premium, 3 per Cent.	Annual Premium, 3½ per Cent.	Annual Premium, 3¾ per Cent.	Annual Premium, 4 per Cent.
20	1.3206	1.2696	1.2460	1.2235	45	2.7232	2.6701	2.6442	2.6188
21	1.3479	1.2964	1.2724	1.2496	46	2.8300	2.7776	2.7520	2.7269
22	1.3767	1.3247	1.3004	1.2772	47	2.9435	2.8919	2.8667	2.8419
23	1.4072	1.3546	1.3300	1.3065	48	3.0645	3.0137	2.9889	2.9645
24	1.4392	1.3861	1.3613	1.3375	49	3.1936	3.1439	3.1196	3.0956
25	1.4731	1.4195	1.3943	1.3702	50	3.3318	3.2833	3.2595	3.2359
26	1.5087	1.4547	1.4293	1.4049	51	3.4800	3.4327	3.4095	3.3865
27	1.5463	1.4919	1.4662	1.4416	52	3.6393	3.5933	3.5708	3.5484
28	1.5859	1.5311	1.5053	1.4803	53	3.8107	3.7663	3.7445	3.7229
29	1.6277	1.5726	1.5465	1.5214	54	3.9958	3.9532	3.9321	3.9113
30	1.6718	1.6164	1.5901	1.5648	55	4.1963	4.1555	4.1354	4.1154
31	1.7184	1.6627	1.6363	1.6108	56	4.4139	4.3751	4.3560	4.3370
32	1.7676	1.7117	1.6851	1.6594	57	4.6505	4.6141	4.5960	4.5781
33	1.8195	1.7634	1.7367	1.7109	58	4.9085	4.8744	4.8577	4.8409
34	1.8743	1.8181	1.7913	1.7653	59	5.1903	5.1590	5.1435	5.1280
35	1.9320	1.8758	1.8489	1.8228	60	5.4990	5.4706	5.4564	5.4423
36	1.9930	1.9368	1.9099	1.8837	61	5.8381	5.8127	5.8001	5.7875
37	2.0574	2.0013	1.9744	1.9481	62	6.2113	6.1890	6.1780	6.1669
38	2.1254	2.0694	2.0425	2.0163	63	6.6220	6.6031	6.5939	6.5843
39	2.1972	2.1414	2.1146	2.0884	64	7.0736	7.0582	7.0506	7.0429
40	2.2731	2.2175	2.1908	2.1646	65	7.5681	7.5560	7.5502	7.5442
41	2.3532	2.2980	2.2714	2.2453	66	8.1041	8.0953	8.0911	8.0867
42	2.4380	2.3832	2.3567	2.3307	67	8.6724	8.6667	8.6640	8.6611
43	2.5277	2.4734	2.4470	2.4212	68	9.2358	9.2322	9.2308	9.2290
44	2.6226	2.5689	2.5428	2.5171	69	9.8981	9.8968	9.8971	9.8955

## MANAGEMENT.

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IN order to ensure the permanent well-being of any Friendly Society, it is obviously essential that the contributions required should be sufficient to provide for the benefits offered to the members; and therefore much attention has been given to the attempt to render intelligible the principles on which to determine what those contributions ought to be. Something further, however, than a mere sufficiency of the contributions is necessary to the well-being of Friendly Societies; namely—that their rules should efficiently provide for the due administration of the contributions when received. To this end, the chief means are—

1st. A strict *economy* in everything relating to the management.

2d. A uniform watchfulness for the prevention of fraud; and

3d. A careful and constant employment of all the funds at interest.

These objects should never be lost sight of in forming a Society's rules.

### NECESSITY FOR AN EFFICIENT CLERK.

Much depends on the efficiency of the person who may be employed as Clerk to a Society; and probably no worse economy can be evinced, than the employing, in such a situation, a man who is incompetent to perform the duties he undertakes, merely because his services can be obtained for a trifle less than might be required by one better qualified for the office. It not unfrequently happens that the notorious inefficiency of a clerk offers facilities, or even holds out temptations, to the more expert and unprincipled of its members to commit frauds on a society's funds, to an extent greater by a hundred fold than the small sum that may be saved in the clerk's salary. And the practice objected to is the less excusable in the present day, because there are happily now few neighbourhoods in which men perfectly competent to act as clerks to Friendly Societies may not be very readily found willing to accept such an employment for a really small remuneration. Possibly the masters of national or parochial schools might, in a majority of cases, be willing, and

even anxious, to fill such situations; and, as a class, they would most probably be found well qualified to perform the duties required of them. Such persons rarely obtain their appointments as schoolmasters without their characters being good; and, from their station in life, they are not exposed to so much temptation to betray their trusts, as more needy persons are. It is, however, by no means intended to assert that men of moral worth are scarce among the members of Friendly Societies; for the contrary is an universally acknowledged fact; but the fitness of a schoolmaster is particularly mentioned from his avocations and moderate leisure usually qualifying him to perform the duties in question; and from feeling how much depends on those duties being honestly and well executed.

#### MEETINGS AT PUBLIC-HOUSES.

A great foe to economy, in conducting the affairs of these societies, is the holding their periodical meetings at public-houses. The positive waste of money, arising from this very frequent but objectionable practice, is greater than, without examination, will be believed. It is thought that not fewer than 1,000,000 persons in this kingdom are members of Friendly Societies, and probably each person does not, on an average, spend less than 5s. per annum, at the monthly meetings and yearly feasts. *The annual expenditure, for what is in many cases a worse than useless purpose, will therefore not fall short of £250,000.* A sum of 5s. per annum, for each member of a Friendly Society, is vastly more than sufficient to defray the society's ordinary and necessary expenses of *management*. A man aged 25 could, for an annual contribution of 5s., secure to himself a superannuation allowance, after the age of 70, of £10 or £11 per annum; or he might, for such an annual payment, provide for an allowance in sickness, until the age of 70, of about 3s. 6d. per week; or for a payment at death, of at least £10. These are pecuniary advantages which might result from a discontinuance of holding the meetings at public-houses or inns; but much more moral good would also follow a reform in this matter. There can be little doubt that the foundation of habits of general intemperance is frequently laid by men who, with the best original intentions, become members of societies established by interested persons, with the sole motive of bene-

*fitting a favoured public-house*; and it is no uncommon occurrence, in seeking to let such a house, to mention, as a special recommendation of it, that two or three beuefit clubs meet there\*. The cases are rare in which any difficulty could occur from societies determining not to meet at public-houses. Wherever a national or parochial school is established, there is little doubt but that the trustees or managers of either would readily permit Friendly Societies to meet in their school-rooms, either without remuneration, or for such a payment only as might be deemed sufficient to cover the actual expense of fire and light, when needed. Failing that resource, the use of a market-house or other public building might probably be obtained, or a room might be hired to hold the meetings in; even should no other place present itself than an inn, the better course then to pursue would be to pay the landlord a specific rent for the temporary occupation of a room in his house, with a distinct understanding that no refreshment whatever should be taken in such room during the evening on which the society might meet. At the same time, every *discouragement* should be given to members staying at the house for the purpose of drinking at all, since it seems peculiarly desirable to separate so creditable and praiseworthy a feeling, as that which usually leads men to join a Friendly Society, from a habit so pernicious to the best interests of individuals as the too common one of associating, in the mind, the idea of dram or beer drinking with the execution of almost every ordinary duty or courtesy of life; a custom so little founded in reason, that it would probably rapidly sink into disuse if it were, for a short time, zealously opposed by comparatively few men of sound sense and reflection.

\* Since the above remarks were written, an instance has come to the author's knowledge, which exemplifies, in a very forcible manner, the evil here spoken of. It is that of a society in which each member has to contribute 4d. for spending money on every monthly night of meeting, whether he be present or absent; and the aggregate of the spending money is always *drunk out* by those who may chance to attend. The society alluded to consists of 250 members, and the spending-money is therefore 4l. 3s. 4d. per month. At the meeting in July, 1833, 26 members only were present; so that each had to consume drink costing 3s. 2½d. After a large quantity of beer had been consumed, ardent spirits were drunk, and ultimately *beer was thrown out at the windows*; because the whole of the money was to be expended *for the good of the house*. Such a case needs no comment; but it may be stated, that some of the members whose fourpences were *taken from the fund* and expended, might in fact leave the society, and never pay their contributions; in all such cases, the society would therefore lose the fourpences spent.

## PERIODICAL MEETINGS OF SOCIETIES.

Indeed there does not appear to exist any necessity whatever for general meetings of societies being held so frequently as once in each month. If they were to meet twice, or even once, in each year, abundant opportunity would be afforded for the members to become acquainted with the state and management of their respective societies. The ordinary affairs of the society could be safely confided, from meeting to meeting, in the hands of a committee; which in truth is now the course very frequently pursued in such institutions, of recent establishment. A similar practice prevails in most of the London assurance offices, however extensive their transactions may be. In truth, general meetings of the members of these large bodies rarely take place oftener than once in the year, and the practice is not found to produce any inconvenience whatever.

The circumstance of societies not meeting every month need offer no obstacle whatever to the contributions of the members being paid monthly; because the stewards, the clerk, or other officers could be empowered to receive the payments as they became due, under precisely the same regulations as now prescribe the payments being made, to those same officers, at a monthly meeting. It seems desirable to retain the practice of paying *monthly* contributions; since it is always found more easy in practice to pay, out of limited incomes, several small sums at short intervals of time, than to pay the aggregate of those same sums at the end of the last of such intervals. This is particularly the case with the young; who are not always found able long to resist the temptation to expend any little accumulation of money they may acquire; and it is the young to whom Friendly Societies open such easy means of providing for their days of infirmity and their old age; the character and conveniences of the young should therefore be peculiarly studied in laying down principles or rules for the guidance of such institutions.

## SYSTEM OF BOOK-KEEPING.

Nothing is more essential to the prevention of fraud, or for the detection of it, if committed, than the adopting a simple yet clear method of keeping a society's accounts. Several very ingenious

systems have been devised by philanthropic individuals\*. These systems of accounts do not, however, always suit the circumstances of societies, especially when the societies are small. It is therefore thought well in this place to suggest a simple and plain method of accounts, which it is believed will be found applicable to a large class of institutions.

The chief objects to be obtained in keeping the accounts of a society are to show accurately what sums become due from time to time; and then to show clearly that they are all received, and are duly brought into the funds of the society. To this end, the following books seem to be sufficient.

*1st Book.*—A book wherein to enter the name and description of every member at the time he enters the society, and to set forth the nature and amount of the benefits he may desire to contribute for; as well as the amount of the contributions he may have to pay. This book might be printed, so as to cause very little trouble in making the requisite entries in it. It may be distinguished by the name of the Admission-Book. The following form would be found a useful one.

No.									
Name, Residence and Employment—									
Date of Admission—									
Age next Birth-day,	on the	day of	18						
Admission Fee (if any) £	.	.	.	.	.	.	.	.	.
Benefits assured	{	Allowance during Sickness, £	per week	.	.	.	.	.	.
	{	Superann <sup>d</sup> Allowance, after age	£	per month	.	.	.	.	.
	{	£ at Death	.	.	.	.	.	.	.
Total Monthly Contribution payable by the Member	.	.	.	.	.	.	.	.	£
Ceased to belong to the Society on the	day of	18							
; having (died, or been excluded or otherwise, as the case may be.)									

The *number* is intended to be filled up with the common series, assigning No. 1 to the first member of the society, No. 2 to the second, No. 3 to the third, and so on for every new member that

\* One of these systems has been recently published by the Rev. John Hodgson, the vicar of Sittingbourne in Kent; whose discretion and disinterested zeal in advancing the best interests of Friendly Societies entitle him to the thanks of all those who desire to see such societies fostered and encouraged, when formed on sound and proper principles.





or third column, under the first month for which his contribution be not payable. The last three columns are repeated for each of the twelve months in the year. As the outline of this book could, like the Admission-Book, be printed, little time would be necessary for the filling it up. It would probably be better to write the list of members anew at the beginning of every year, than make each list serve for a longer term than twelve months; as, by the former method, a small book of little cost would answer the purpose proposed, while a book sufficiently large to serve for a long term would be expensive as well as cumbrous.

*3rd Book.*—Whatever money might be received by the stewards should be at once entered into a *cash-book*, specifying therein from whom received, and on what account. It would be sufficient to distinguish the money received under the heads,—Contributions—Fines—Sundries—Total.

The payments made by the stewards should, in like manner, be regularly entered on the opposite page of the cash-book, under distinct heads. It might be sufficient to carry the *payments* to account once in each week, as regards the payments made to sick or superannuated members, and payments at death. The *particular* sums paid during the week might be charged, under the different heads mentioned, in a small *subsidiary cash-book* (hereafter described), to be kept for the express purpose of recording these payments.



This cash-book ought to be balanced at least once in every month; and whatever money might then appear to be in hands of the stewards, beyond what would be requisite for the immediate relief of the sick or superannuated members, should be at once handed to the treasurer, with whom a regular account ought to be kept in a *ledger*, wherein the treasurer should be charged with all sums paid to him, and credited on the opposite page of the book for all payments made by him.

*4th Book.*—In the Ledger, accounts should be opened headed “Commissioners of the National Debt,”

“The Trustees of the Savings’ Bank at \_\_\_\_\_”, or with any other parties with whom a society may have transactions. The following is the usual form of a ledger account, and it need not be varied for the purposes of a Friendly Society:—

Dr. Treasurer.			Per Contra. Cr.		
	£	s. d.		£	s. d.
1832.			1832.		
Dec. 3. To cash from Stewards	20	0 0	Dec. 18. By cash paid the		
10.       "       "	25	0 0	Commissioners of	60	0 0
17.       "       "	25	0 0	the National Debt		
	<u>£71</u>	<u>0 0</u>	31. Balance . . .	11	0 0
1833.				<u>£71</u>	<u>0 0</u>
Jan. 1. To balance . . .	£11	0 0			

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Dr. Commissioners of the National Debt.			Per Contra. Cr.		
	£	s. d.		£	s. d.
1833.					
July 18. To cash . . .	£60	0 0			

At the end of every year, this book should be balanced,—that is, each account in it should be cast up, and the difference between the two sides of each account shown in the manner exemplified in that account headed “Treasurer.” Then, by collecting together the balances of the several accounts, the state of the society’s assets would at once appear, as well as in whose custody its funds might be. To these assets there should, however, be added the presumed small balance remaining in the hands of the stewards.

*5th Book.*—The small subsidiary cash-book proposed to be kept, in which to enter under separate heads, and in different





## Register of Sickness and Mortality.

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In the first column of the foregoing form is intended to be inserted the number corresponding to a member's name in the Admission-Book No. 1; and it is meant that the name of *every* member who may enter the society shall be immediately registered in this book—stating the date of his admission to the society in column 2; his *then* age next birth-day in column 3; the date of his next birth-day in column 4; and the date at which he would become a free member, in column 5: columns 6, 7, and 8 become necessary, because it is not contemplated that a member shall be compelled to contribute for any benefit that he may not, in his own estimation, want; or that his means may not allow him to provide for. The same individual may consequently begin at different times to contribute for each of the three benefits embraced in a Society's plan; and it is quite essential that that fact should be stated, when it exists; otherwise, when no sickness should be registered opposite to a member's number in the first column, it could not be known whether he had in truth experienced no sickness, or whether he had not assured for an allowance in sickness. The remaining columns can be filled up at the end of every year; and it would be well if all societies would, for the purposes of this book at least, make up their yearly accounts to the 31st of December. The uses of the other columns in the form given are explained at the head of each; but, in order to render the record intended to be accomplished by them as perfect as the nature of the case will admit, it may be desirable to state, in reference to column 10, that, in cases where a member may have received an allowance during sickness, for any number of odd days, over even and complete weeks, Sundays are not usually included in those odd days; so that, if a member received an allowance at three different periods in one year—say, for 3 weeks 2 days, for 2 weeks 1 day, and for 1 week 3 days—the total time of that member's sick allowance during the year would be 7 weeks; because, as was before mentioned, since Sundays are excluded when allowance is made for odd days, there are in fact, in such cases, but 6 days to make up a week. And, bearing this in mind, it would, if any one sickness should continue 6 weeks—say  $3\frac{1}{2}$  weeks in one year and  $2\frac{1}{2}$  weeks in the next year—be proper to write, as the duration of sickness, in the first year, 3 weeks 3 days, and in the following year, 2 weeks 3 days; in order that the two periods added together, on the assumption of 6 days

making a week, should not exceed the time over which the sickness in reality extended. It is thought that in practice it will be found less trouble to collect from the subsidiary cash-book, No. 5, at the end of each year, the several terms for which sickness allowance may have been paid to each individual member, than to keep a separate register of sickness for each. To avoid mistake, it is necessary to state, that, in this account, *walking-pay is not meant to include that superannuation allowance* which may of right commence from a given age, from age 70 for instance, and which allowance would be due without reference to the state of the member's health.

In the event of a member ceasing to belong to the society, that fact should be forthwith recorded in this Return Book, by immediately writing the date of his so ceasing to belong to the society in the eighth column, and the cause in the ninth column; viz., whether from death, expulsion, non-payment of contribution, or other cause. If these columns should be left blank, there would be nothing whatever to show that the member were not still attached to the society; and in using the facts to be here registered, this omission would mislead any one seeking information from the assumed experience of the society. Provided a book such as is here proposed be carefully kept, and duly examined by the auditors; and a transcript of it be periodically sent to a proper depository, a fund of information will in a few years be collected, capable of affording to Friendly Societies the most valuable aid in conducting their affairs. As the information contemplated by these returns is sought for the sole benefit of the societies themselves, it is hoped that the slight trouble requisite for the furnishing such returns will be cheerfully and even zealously undertaken. They are very necessary for either confirming or correcting the results which have been relied on in this treatise; as well as for ascertaining, from time to time, whether natural or political causes may effect any changes in the rate of sickness or of mortality among those classes who form themselves into Friendly Societies.



## SUGGESTION FOR A CENTRAL OFFICE IN LONDON FOR THE AID AND CONVENIENCE OF FRIENDLY SOCIETIES.

A small office might, with much advantage to Friendly Societies, be opened in London, under the protection of Government, for the safe and systematic keeping of the returns above mentioned, as well as for the furnishing to Societies, or to the gentry who may patronize them, such information or advice as they may, from time to time, stand in need of,—as to the principles on which societies may be best founded, and their accounts kept ; as well as numberless other points in their affairs, on which they now have occasion to seek information, often at considerable expense ; because the only means they possess of getting such advice as they can safely depend on, is through the medium of respectable country solicitors, and these latter have to obtain their information through a correspondence with their London agents. Such an office as the one suggested would be a very proper place of deposit for the recognized copies of the rules of societies, which are now kept with the records of the several counties in England and Wales. The rules might still be enrolled or registered through the respective clerks of the peace, if any advantage result from their coming through those channels. Printed forms for societies' accounts might also be supplied from such an office ; and from these being prepared in large quantities, they could be furnished at a much cheaper rate than they could be otherwise obtained for. It is doubtful whether such an establishment as the one mentioned would not support itself, either by taking a very small annual or occasional fee from the societies, or from the sale of the printed forms of accounts ; but if the office did not bear its own charge, *the whole cost* of it, if well arranged and prudently managed, would be a very insignificant sum ; and as its object, and most probable effect, would be to aid in advancing the moral condition of the labouring classes, the expenditure would be a wise one.

## INVESTMENT OF FUNDS AT INTEREST.

As it is only from a careful and constant employment of a society's funds at compound interest, that it can be enabled to fulfil its engagements, every member should consider it to be

his own especial business to urge that not one pound, beyond the sum absolutely requisite to meet the temporary wants of the society, should remain unproductive in the hands of either the stewards or treasurer. No member should content himself with merely urging this: he should satisfy himself that such a principle is strictly adhered to, however estimable may be the characters of those who hold the society's property. It will have been seen that all the calculations in this treatise suppose the contributions to produce interest *from the very day* in which they are received, and although this cannot be rigidly accomplished, there can be no difficulty in employing even the smallest sum at interest; since a Friendly Society has always the liberty of opening an account with a savings' bank;—all money placed in which would, from the time of deposit, yield an interest very little less than that allowed to the society itself by the Commissioners of the National Debt. Whenever the amount in the savings' bank should accumulate to 50*l.*, it could, and ought to be immediately drawn out, and paid to the society's account with the said Commissioners. If the practice here recommended were uniformly adopted by societies, there would not be a possibility of those instances of loss and ruin occurring which have sometimes resulted from the misfortunes or crimes of persons in whom improper and unwise confidence has been placed.

#### PROPOSED COPY OF RULES FOR A FRIENDLY SOCIETY.

The following rules are, in many of their parts, taken from those of one or two societies that, with numerous others, have come under the professional notice of the author; the arrangement of them, however, has been much changed. They are now given, not with the expectation that they will meet all the views of every Friendly Society; but because it is thought that they provide for the leading business and *all the practical points* of such institutions, and may therefore well serve for an example, particularly as to arrangement, and save some trouble to those on whom the task of drawing up rules for similar purposes may devolve.

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## THE RULES OF THE FRIENDLY SOCIETY

Established at \_\_\_\_\_, in the County of \_\_\_\_\_  
 on the \_\_\_\_\_ day of \_\_\_\_\_ 18 \_\_\_\_\_.

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*Rule 1.*

## OBJECTS OF THE SOCIETY.

The object of this Society is to assure to persons, between the ages of 21 and 55, who may become members thereof—

1st. An allowance, not exceeding 20s. per week, during sickness until the age of 70 ;

2d. An allowance, not exceeding in the whole £2 per month, from and after the ages 55, 60, 65 or 70, to continue during life ; and,

3d. A payment at death, not exceeding £20\*.

*Rule 2.*

## MONTHLY CONTRIBUTIONS.

The contributions for the above-mentioned assurances shall be paid monthly, and shall be regulated by the ages of the members at the time of their admission, conformably to Tables 1, 2, and 3, at the end of these rules. Each member assuring an allowance during sickness shall, in addition to the monthly contribution, pay 2s. per annum, to entitle himself to medical attendance and medicines, when needful and demanded : provided the surgeon to the society will accept such 2s. per annum as a remuneration for his advice and medicines.

*Rule 3.*

## SINGLE CONTRIBUTIONS.

A single contribution may be paid on admission, or at any subsequent time, to redeem the whole of the monthly contributions

\* A sum (not exceeding £10, probably) might be separately assured, to be payable at the death of a member's wife ; who might, in the event of the husband's death, be allowed to continue the assurance on payment of the original monthly contribution requisite for such a benefit, as indicated in the Tables.

payable by any member, or any part thereof; such single contributions shall be determined by Table No. 4.

Whenever the monthly contributions for any assurance shall have been redeemed in full, the allowances, in respect thereof, shall thenceforth continue exempt from forfeiture, notwithstanding the monthly contributions for the assurance of any other benefit may remain unpaid.

#### *Rule 4.*

##### HONORARY SUBSCRIBERS.

Every person contributing, by gift to the society, not less than £5 in one sum, or by annual subscription not less than 10s., shall be considered *an honorary subscriber*, and shall have a vote in all general meetings of the society.

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##### MANAGEMENT.

#### *Rule 5.*

##### OFFICERS.

The Society shall be under the management of a committee of 12 members; exclusive of a patron, president, trustees, a treasurer, 4 stewards and 3 auditors, all of whom shall be members of the committee, and vote therein by virtue of their respective offices. There shall also be a surgeon to the society, and a clerk.

#### *Rule 6.*

##### QUALIFICATION OF OFFICERS.

No person, being a patron, president, treasurer or trustee of the society, shall be an assured member, or shall derive any benefit or emolument from the society's funds. The committee of 12, the 4 stewards, and the auditors, shall be either honorary subscribers, or members who are assured for *all* the three descriptions of benefits embraced in the society's plan.

#### *Rule 7.*

##### MEETINGS OF THE SOCIETY.

All the meetings of this society shall be held at the National School-room, in

Before the commencement of any other business, a chairman shall be elected. All questions shall be determined by vote; the majority shall bind the minority; and if the votes on both sides, including the chairman's vote, shall be equal, the chairman shall give the casting vote. The committee or trustees may adjourn themselves to meet at such times as the major part of them present at any meeting shall appoint; but no proceedings shall be valid, unless entered, together with the names of the committee or trustees present, in a book, to be kept for that purpose, and signed by the chairman of the meeting.

In case five members of the committee shall not attend at any meeting, the clerk shall have power to adjourn such meeting to some convenient day; which adjournment, being entered in the book of proceedings, shall be deemed a full and sufficient continuance of the said meeting.

### *Rule 8.*

#### ANNUAL MEETING.

An annual general meeting of the society shall be held on the first Monday in the month of , at o'clock; at which meeting the accounts and books of the society, balanced up to the 31st of December in the preceding year, duly examined and authenticated by the auditors, shall be submitted.

The committee, the stewards, the auditors, the surgeon, and the clerk for the ensuing year, shall be then elected, as well as the patron, president, and treasurer of the society.

After the annual meeting, the members shall meet at some convenient place, when a dinner shall be provided, under the management of the committee of the society. Every member who may wish to attend this dinner shall give to the clerk at least 14 days' previous notice of such his wish, but the attendance of the members at any such meeting shall be voluntary, and the funds of the society shall not sustain any portion of the expenses incurred on such occasions.

### *Rule 9.*

#### DUTIES OF OFFICERS.

The committee shall meet at o'clock on the last Saturday in every month, and any five so met shall have full power to direct

and manage generally the society's business, of every description, according to its rules. They shall appoint the voluntary visitors, hereafter mentioned; authorize and order payment of every expense of management, including the remuneration to the clerk; decide on the validity of claims for any of the benefits assured by the members; examine the accounts of the society for the preceding month; and see that the funds of the society are constantly invested so soon as received.

### *Rule 10.*

#### TREASURER.

The Treasurer shall be responsible for such sums of money as may, from time to time, be paid into his hands by any person on account of the society, and for the investment or application of the same, under the authority of the committee or trustees. He shall balance his cash account monthly, and furnish the clerk with a duplicate thereof.

### *Rule 11.*

#### TRUSTEES.

A meeting of the trustees shall be held on the first Monday in every month, at        o'clock. Any three trustees shall, at such meetings, be authorized to perform and execute the several duties and functions delegated to such trustees, either by the statutes of the realm or by the rules of the society.

The trustees shall, from time to time, require and cause the treasurer of the society to pay directly into the Bank of England all sums of the society's money, not being less than £50, to the account of the Commissioners for the Reduction of the National Debt, or to invest the same in the public stocks or funds of Great Britain, or in a Savings' Bank; in the proper names of the trustees, or any three or more of them; and upon the declaration of the said trustees, or any three or more of them, that such monies belong exclusively to this society.

All sums of money, being less than £50, shall be deposited in the savings' bank, established at       , in the name of the treasurer of the society until the same shall amount to £50; after which, every such sum shall be invested in the manner

directed by the preceding part of this rule, reserving such sums only as the committee may deem necessary to satisfy the current demands upon the society.

Whenever any sum is to be drawn by the trustees out of the Bank of England, the draft or order for such purpose shall be signed by not less than three trustees, and the signature of each of the said three trustees shall be attested by a different assured member of the society.

*Rule 12.*

SURGEON.

The surgeon shall, on the application of any person who may become a candidate for admission, ascertain and certify in writing the state of that person's health. He shall visit, at least once in each week, every member receiving an allowance in sickness, and residing within        miles of his, the surgeon's, house. He shall record, and certify if required, the dates of his attendances; and shall afford medical attendance, advice and medicines, as often as needful, to every member residing within the aforesaid limit, and assuring against sickness. He shall have liberty to visit every member claiming any allowance in sickness as often as he may think fit, for the purpose of ascertaining and certifying correctly the state of his health.

*Rule 13.*

CLERK.

The clerk shall give his attendance at all meetings of the society, and record the minutes of their proceedings, which he shall transcribe into a book; to be authenticated by the signature of the chairman, as the proceedings of the respective meetings. He shall receive proposals from persons desirous of becoming members, and shall submit the same to the committee. He shall also receive the claims for allowances of every description granted by these rules, and lay the same before the stewards or the committee; and shall keep the accounts, documents, and papers of the society, in such form and manner, and for such uses and purposes, as the committee may appoint.

*Rule 14.*

STEWARDS.

One of the stewards shall attend at the ordinary place of the

society's meetings every Saturday, from the hour of four until the hour of eight in the afternoon, to certify in writing all sums then and there received or paid, and to examine all demands for allowances in sickness, and, if he think fit, shall authorize the payment of the same until the next meeting of the committee. The succession of the attendances of the stewards shall be regulated by the alphabetical order of their names. The accounts of the society shall at all times be open to the inspection of the stewards. The stewards may submit, for the consideration of the committee or trustees at any time assembled, such observations or suggestions as they may deem calculated to promote the welfare of the society.

*Rule 15.*

AUDITORS.

The auditors shall from time to time examine all the accounts of the society, and shall deliver, at the general annual meeting of the members, a report containing a statement of the accounts for the preceding year, with their observations thereon; which report, if approved by such meeting, shall be printed for the use of the members.

*Rule 16.*

VOLUNTARY VISITORS.

Voluntary visitors, either honorary or ordinary members, shall be chosen annually by the committee—to visit, from time to time, all sick or infirm members—to certify their condition to the stewards weekly—to convey to them severally their allowances—and to superintend the application of the same on behalf of every member who may be incapable of doing so for himself.

*Rule 17.*

SECURITY FROM TREASURER AND CLERK.

The treasurer and the clerk shall each give such security as the committee, or the major part of them, shall from time to time require.

*Rule 18.*

SPECIAL MEETINGS OF THE COMMITTEE OR TRUSTEES.

A special meeting of the committee, or of the trustees, may be summoned on any emergency by the direction of the president, or of any three members of the committee or trustees, signified in



writing to the clerk, and stating the purposes for which such special meeting is required—of which meeting a written notice shall be given to every member of the committee or trustee, stating the time and place appointed for holding the said meeting. Such special meeting shall transact no other business than that which shall have been specified in the notice calling the same.

### Rule 19.

#### ADMISSION OF MEMBERS.

Every person desirous of becoming a member of the society shall produce a *recommendation*, signed by two members, in the form following, viz.:—

We, the underwritten, do recommend A—— B—— to be a member of the Friendly Society established at

Dated this       day of       , 18       .

C—— D—— }  
E—— F—— } Members.

And he shall deliver to the clerk a copy of the *register of his baptism*, signed by the minister of the parish wherein he may have been so registered, or he shall make an affidavit setting forth his age, and stating that no such register is to be found; or he shall deliver a certified copy of any other public register of baptism, or such evidence of his age shall be satisfactory to the committee of the society. Every person proposing to assure an allowance during sickness, or a sum at his death, shall further produce a *certificate signed by the surgeon* of the society, stating his opinion as to the health of the candidate. He shall also sign the following *form of declaration*:

I, A—— B——, born in the parish of       , in the county of       , on the       day of       , in the year 18       , but now of       , in the county of       , by trade or occupation a       , being desirous of becoming a member of the       Friendly Society, and intending to make an assurance therein       of       shillings weekly during sickness,       of       pounds monthly as an annuity, to commence at the age of       years, and       of       pounds to be paid on my death. And having perused and considered the rules of the above-mentioned society, I do hereby declare that my age does not, on my next birth-day, exceed

years, and that I am not afflicted with, or subject to, any disorder which tends to the shortening of life, except

; and I do hereby agree that this declaration shall be the basis of the contract between the said society and myself, and that if any untrue averment be contained in this declaration, all monies which shall have been paid to the society by me shall be forfeited; and I further agree that my proposed assurances shall, if allowed, be made subject to the rules of the said society.

Dated this            day of            , 18 .  
(Signed)            A—— B——.\*

Witness, C—— D——.

If, upon the clerk submitting these several documents to the meeting of the committee next following the day when they are all received, the person be admitted as a member, the same shall be certified in writing to such person; and, on his paying the contributions that may be due in respect of the assurances proposed by him, he shall be a member of the society. The clerk shall then deliver to him a copy of these rules, for which he shall pay one shilling.

### Rule 20.

#### ALLOWANCE DURING SICKNESS.

When any member, who shall have assured for an allowance during sickness, shall be incapable, from sickness or infirmity, of following his usual occupation, he shall give notice thereof to the clerk of the society, on any Saturday before the hour of eleven in the forenoon, *in the following form* :—

To the clerk of the Friendly Society established at

I, A—— B——, do demand the weekly sum of            , being the sickness allowance due to me as a member of the above-mentioned society; and I do hereby declare, that by reason of [*here state the sickness or infirmity*] I am unable to exercise, in any manner, my customary occupation; and I hereby promise to give notice in writing to the clerk of the society so soon as I shall again become able to follow my said occupation.

A—— B——.

\* In cases where persons desire to assure for an allowance in old age only, those parts of the declaration referring to health may be struck out.

*Rule 21.*

## SICKNESS MUST BE CERTIFIED BY THE SOCIETY'S SURGEON.

No demand for sickness allowance, made by any member, shall be admitted by the stewards or the committee, unless the sickness or infirmity therein stated shall be certified, in writing, by the surgeon of the society, if the member be resident within miles of the society's place of meeting; if otherwise, every such demand shall be certified by the party's medical attendant, and countersigned by the minister or churchwarden of the parish wherein he may reside, or by an honorary subscriber to the society.

*Rule 22.*

## PAYMENTS TO THE MEMBERS.

The allowance due to any member during sickness shall be paid to him between the hours of four and eight in the afternoon, on the Saturday next following the day on which any such allowance shall have been authorised by the stewards or the committee. If any delay should occur in determining the validity of the claim, the allowance to the member shall be considered as commencing at the hour of four in the afternoon of the day on which the member's application was first delivered.

*Rule 23.*

## DISQUALIFICATIONS.

No member shall be entitled to an allowance in sickness until the expiration of one year from his admission into the Society, nor until he shall have paid all contributions and fines due from him to the society; neither shall any allowance be granted to any member, on account of sickness which shall have ceased at the time when the demand for it may be made, nor during any disease or infirmity with which the member may have been afflicted at the time of his admission into the society, or which may have been contracted by profligacy, quarrelling, or drunkenness; nor during confinement in prison under any criminal conviction; nor on change of abode, until notice of such change shall have been given to the clerk of the society.

*Rule 24.*

## SUSPENSION OF ALLOWANCE IN SICKNESS.

Every allowance in sickness shall be suspended, during the discretion of the committee or stewards, if the member receiving such allowance shall at any time refuse to be seen by the surgeon or by the visitor of the society; or to answer such questions respecting his health or employment as it may be deemed necessary to ask; or shall drink or game in any public-house, or on any of the premises appertaining thereto; or shall, by any wilful act or misconduct, delay the recovery of his health; or shall be absent from his abode between sunset and sunrise; or shall leave home for more than one day, without delivering to the clerk of the society a certificate, signed by the surgeon attending him, stating the place to which such member is going, and the time when he intends to return, and farther stating that such absence from home is not likely to injure his health. No member, applying for relief under the Insolvent Debtors' Act, and being remanded to prison for fraud or misconduct, shall be entitled to any allowance in sickness during the remainder of his imprisonment.

*Rule 25.*

## FORFEITURE OF PAYMENT AT DEATH.

Every assurance of a payment at death shall become void, if the member making the same shall die by any sentence of the law, or by his own hands.

*Rule 26.*

## EXCLUSION.

If any member shall be convicted of felony; or shall, by any false or fraudulent representation or demand, obtain, or attempt to obtain, any allowance or money from the funds of the society; or shall enter his Majesty's navy or army; or go beyond the limits of the United Kingdom; he shall, upon due proof, to the satisfaction of not less in number than five (being a majority of the committee at any meeting assembled), be for ever excluded from the society, and all his interest and monies therein shall be forfeited.

Any member, who may have been excluded for having entered the army or navy, or for leaving the United Kingdom, may, if

the committee see fit, be re-instated on the cause of exclusion ceasing, and on its being satisfactorily shown that the member's health remains perfectly good; and provided the contributions for the time the member remained excluded be all paid to the society, with interest thereon at the rate of five per cent. per annum.

### *Rule 27.*

#### ARREARS OF CONTRIBUTION. }

Every member whose contribution may be in arrear for one month, but for not more than three months, shall pay, as a fine, one-twelfth part of the contributions due; and every member whose contribution may be in arrear over three, but not over six months, shall pay a fine equal to one-sixth part of the contributions due. If all arrears of contributions and fines be not paid before the end of the seventh month, the member shall forfeit every claim for those allowances or benefits in respect of which the monthly contributions were due; as well as the contributions that may have been previously paid for the like assurances. But if it shall appear to the committee, that the default in payment arose from any sufficiently urgent cause, they may order such member to be again admitted and reinstated in the society, in all respects as before the exclusion, at any time not exceeding twelve months from the date of his first defalcation; provided that he shall conform to all the rules prescribed for the first admission of members, and shall pay the arrears of contribution and a fine equal to double the contributions which would have been due upon the assurances, if the same had not been forfeited.

### *Rule 28.*

#### PAYMENT OF ANNUITIES.

Every annuity shall grow due on the last Saturday in each month, and be then payable.

### *Rule 29.*

#### PAYMENTS AT DEATH.

In case any member, who shall have assured a sum payable at his death, shall die, and his will shall not be proved, and no letters of administration to his effects shall be taken out within six calendar months after his decease, it shall then be lawful for

the trustees to pay the sum assured, in such manner as to the committee may appear to be most beneficial for the relatives of the deceased, or according to the statute of distribution.

*Rule 30.*

PURCHASE OF ASSURANCES BY THE SOCIETY.

If any member shall, by any unforeseen circumstances, not occasioned by his immorality or improvidence, be rendered incapable of paying his monthly contributions, the committee may purchase, for the society, the interest of such member, at a price to be conformable to the tables of the society.

*Rule 31.*

TRANSFER OF ASSURANCES.

If any member shall remove from the limits of the society to any other place, in which a Friendly Society, founded and constituted upon the same principles and adopting the same Tables as this institution, shall have been established according to law, the committee may, on the application of such member, transfer his assurance to any such society, and pay such sum of money as shall, by the tables of this society, appear to be a just equivalent for such transfer. In like manner, any member of another society may, on becoming an inhabitant within the limits of this society, be, by the committee, admitted a member, on payment of an equivalent sum, and on subscribing, before his admission, the declaration by these rules prescribed, as well as conforming thereto in all other respects.

*Rule 32.*

FINES.

A steward, who shall neglect his weekly attendance, and shall not provide another steward as his substitute, shall pay a fine of 5s. Any member, who may, by an annual or special general meeting be elected one of the committee or stewards of the society, and shall refuse to perform the duties of those offices respectively, shall be fined 5s.

A failure to pay the before mentioned fines, at the times they may be incurred, shall be treated in all respects as a failure to pay a monthly contribution then due. Provided always, that no

member shall be subject to the last-mentioned fine who shall, within three years then last past, have served either of the offices named.

*Rule 33.*

ENFORCING THE DUTIES OF MEMBERS.

A member transgressing the rules of the society may be summoned by any two justices of the peace acting for the division or place in which the society is established, to appear before them; and such justices may proceed to hear and determine the matter complained of, according to the rules of the society; and may make such order thereon as to them shall seem just, which order shall be enforced according to the statute in that behalf made and provided.

*Rule 34.*

ENFORCING THE DUTIES OF OFFICERS.

If any complaint be made to two justices of the peace, as aforesaid, by any member, of relief to which he shall be justly entitled according to the rules of the society, having been refused him, the said two justices shall, upon complaint of the party aggrieved, summon the person against whom complaint shall be made, being an officer of the society, and shall award such sum of money to be forthwith paid to the complainant as shall appear to them to be due, together with costs; and if the sum awarded, together with the costs, be not forthwith paid in the presence of such justices, such justices shall, by warrant, order such sum and costs to be levied by distress upon the goods of the officer complained of.

*Rule 35.*

BOOK-KEEPING.

The system of book-keeping shall be so arranged as to exhibit clearly and correctly, at the conclusion of every year, the exact state of the society's assets, as well as in whose hands or custody the same may be.

*Rule 36.*

EXPENSES OF MANAGEMENT.

Inasmuch as the tables of contributions hereafter given do not make provision for the expenses that may be incurred in managing

the affairs of the society, such expenses shall be defrayed in the following manner:—An account shall be opened in the society's ledger, to be called the auxiliary fund; on one side of which account shall be recorded the total amount received from benefactors and from honorary members, as well as what may be received from the ordinary members for fines of every description; and on the other side of such account shall be recorded, at the end of each year, the whole of the society's charges of management, including the salary of the clerk, rent, printing, stationery, law expenses, and any other payment, except the investment of the society's funds, and the several allowances that may be made to the members in sickness, old age, or at death. If, at the end of any year, it be found that the charges of management are more than provided for by the amount of benefactions, honorary subscriptions and fines, the difference, or balance, shall be carried forward in aid of the management for the next year, and so on from year to year; but if it be found, at the end of any year, that the charges of management have exceeded the above-mentioned means of defraying them, then the difference, or deficiency, shall be paid in equal shares by all the members of the society, within three months after the expiration of each year; at the end of which three months, each member's share shall be considered, in all respects, as an arrear of the monthly contributions, and dealt with accordingly.

### *Rule 37.*

#### APPLICATION OF FUNDS.

All monies received as contributions or fines from members, or as donations or subscriptions from honorary subscribers, shall be exclusively applied in the manner set forth in these rules; and any officer of the society who may misapply its funds, shall repay the same, and shall be excluded.

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TABLE No. 1.\*

A Table of Monthly Contributions, to be constantly paid by Persons of the under-mentioned Ages when admitted, until Age 70, to assure an allowance of £1 per week during Sickness, from the time of Admission to Age 70.

Age next Birth-day at Admission.	Monthly Contributions.	Age next Birth-day at Admission.	Monthly Contributions.
	s. d.		s. d.
20	2 1	38	3 4½
21	2 1½	39	3 6½
22	2 2	40	3 7½
23	2 2½	41	3 9½
24	2 3½	42	3 11½
25	2 4	43	4 1
26	2 4½	44	4 2½
27	2 5½	45	4 5
28	2 6	46	4 7
29	2 7	47	4 9½
30	2 7½	48	4 11½
31	2 8½	49	5 2½
32	2 9½	50	5 5½
33	2 10½	51	5 8½
34	2 11½	52	5 11½
35	3 1	53	6 3
36	3 2½	54	6 6½
37	3 3½	55	6 10½

The contributions to be paid for any allowance less than £1 per week are to bear such a proportion to the contributions above-mentioned, as the less allowance may bear to £1. So that the contributions for an allowance during sickness of 10s. per week will uniformly be one half of the above contributions; and the contributions for an allowance during sickness of 5s. per week, will, in like manner, be one fourth part of the above contributions.

\* It is proper to state, that this and the three following Tables are given, like the other parts of the rules to which they refer, merely as models; and, for reasons which have been adduced in a former part of the work, they are by no means to be hastily adopted as applicable in the circumstances of every Friendly Society.

TABLE No. 2.\*

A Table of Monthly Contributions, to be constantly paid by Persons of the under-mentioned Ages, when admitted, to assure an Annuity of £24 per annum, payable to them *monthly*, from and after the several Ages under-mentioned. The Monthly Contributions, in every case, to cease when the Annuity commences.

Age next Birth-day at Admission.	MONTHLY CONTRIBUTIONS FOR AN ANNUITY							
	To commence at Age 55.		To commence at Age 60.		To commence at Age 65.		To commence at Age 70.	
	<i>s.</i>	<i>d.</i>	<i>s.</i>	<i>d.</i>	<i>s.</i>	<i>d.</i>	<i>s.</i>	<i>d.</i>
13	2	9 $\frac{1}{2}$	1	8 $\frac{1}{2}$	0	11 $\frac{1}{2}$	0	6
14	2	11 $\frac{1}{2}$	1	9 $\frac{1}{2}$	1	0	0	6 $\frac{1}{2}$
15	3	1 $\frac{1}{2}$	1	10 $\frac{1}{2}$	1	0 $\frac{1}{2}$	0	6 $\frac{1}{2}$
16	3	3 $\frac{1}{2}$	1	11 $\frac{1}{2}$	1	1 $\frac{1}{2}$	0	7
17	3	6	2	1 $\frac{1}{2}$	1	2 $\frac{1}{2}$	0	7 $\frac{1}{2}$
18	3	8 $\frac{1}{2}$	2	2 $\frac{1}{2}$	1	3	0	7 $\frac{1}{2}$
19	3	11	2	4 $\frac{1}{2}$	1	3 $\frac{1}{2}$	0	8
20	4	2	2	5 $\frac{1}{2}$	1	4 $\frac{1}{2}$	0	8 $\frac{1}{2}$
21	4	5 $\frac{1}{2}$	2	7 $\frac{1}{2}$	1	5 $\frac{1}{2}$	0	9
22	4	8 $\frac{1}{2}$	2	9 $\frac{1}{2}$	1	6 $\frac{1}{2}$	0	9 $\frac{1}{2}$
23	5	0	2	11 $\frac{1}{2}$	1	7 $\frac{1}{2}$	0	10
24	5	4	3	1 $\frac{1}{2}$	1	9	0	10 $\frac{1}{2}$
25	5	8	3	4	1	10 $\frac{1}{2}$	0	11 $\frac{1}{2}$
26	6	0 $\frac{1}{2}$	3	6 $\frac{1}{2}$	1	11 $\frac{1}{2}$	1	0
27	6	5 $\frac{1}{2}$	3	9 $\frac{1}{2}$	2	1	1	0 $\frac{1}{2}$
28	6	11	4	0 $\frac{1}{2}$	2	2 $\frac{1}{2}$	1	1 $\frac{1}{2}$
29	7	5	4	3 $\frac{1}{2}$	2	4 $\frac{1}{2}$	1	2 $\frac{1}{2}$
30	7	11 $\frac{1}{2}$	4	7	2	6 $\frac{1}{2}$	1	3 $\frac{1}{2}$
31	8	6 $\frac{1}{2}$	4	10 $\frac{1}{2}$	2	8 $\frac{1}{2}$	1	4 $\frac{1}{2}$
32	9	2 $\frac{1}{2}$	5	3	2	10 $\frac{1}{2}$	1	5 $\frac{1}{2}$
33	9	11	5	7 $\frac{1}{2}$	3	0 $\frac{1}{2}$	1	6 $\frac{1}{2}$
34	10	8 $\frac{1}{2}$	6	0 $\frac{1}{2}$	3	3 $\frac{1}{2}$	1	7 $\frac{1}{2}$
35	11	7 $\frac{1}{2}$	6	5 $\frac{1}{2}$	3	6	1	9
36	12	7 $\frac{1}{2}$	6	11 $\frac{1}{2}$	3	9	1	10 $\frac{1}{2}$
37	13	9	7	6 $\frac{1}{2}$	4	0 $\frac{1}{2}$	2	0
38	15	0 $\frac{1}{2}$	8	1 $\frac{1}{2}$	4	3 $\frac{1}{2}$	2	1 $\frac{1}{2}$
39	16	5 $\frac{1}{2}$	8	9 $\frac{1}{2}$	4	7 $\frac{1}{2}$	2	3 $\frac{1}{2}$
40	18	1 $\frac{1}{2}$	9	7	5	0	2	5 $\frac{1}{2}$
41	.....	.....	10	5 $\frac{1}{2}$	5	5	2	7 $\frac{1}{2}$
42	.....	.....	11	4 $\frac{1}{2}$	5	10 $\frac{1}{2}$	2	10
43	.....	.....	12	5 $\frac{1}{2}$	6	4 $\frac{1}{2}$	3	0 $\frac{1}{2}$
44	.....	.....	13	8 $\frac{1}{2}$	6	10 $\frac{1}{2}$	3	3 $\frac{1}{2}$
45	.....	.....	15	1 $\frac{1}{2}$	7	6 $\frac{1}{2}$	3	7
46	.....	.....	.....	.....	8	2 $\frac{1}{2}$	3	10 $\frac{1}{2}$
47	.....	.....	.....	.....	8	11 $\frac{1}{2}$	4	2 $\frac{1}{2}$
48	.....	.....	.....	.....	9	10 $\frac{1}{2}$	4	7
49	.....	.....	.....	.....	10	10 $\frac{1}{2}$	5	0
50	.....	.....	.....	.....	12	0 $\frac{1}{2}$	5	5 $\frac{1}{2}$
51	.....	.....	.....	.....	.....	.....	6	0
52	.....	.....	.....	.....	.....	.....	6	7 $\frac{1}{2}$
53	.....	.....	.....	.....	.....	.....	7	3 $\frac{1}{2}$
54	.....	.....	.....	.....	.....	.....	8	1 $\frac{1}{2}$
55	.....	.....	.....	.....	.....	.....	9	0 $\frac{1}{2}$

The contributions to be paid for any annuity less than £24, are to bear such a proportion to the contributions above-mentioned, as the less annuity may bear to £24. So that the contributions for an annuity of £12 (or £1 per month) will uniformly be one half of the above-mentioned contributions; and the contributions for an annuity of £6 (or 10s. per month) will, in like manner, be one fourth part of the above contributions.

\* See remark at the foot of Table No. 1.

TABLE No. 3.\*

A Table of Monthly Contributions to be constantly paid by Persons of the under-mentioned Ages at Admission, from the time of Admission to Age 70, to assure a sum of 20*l.* at Death.

Age next Birth-day at Admission.	Monthly Contri- bution.	Age next Birth-day at Admission.	Monthly Contri- bution.	Age next Birth-day at Admission.	Monthly Contri- bution.
	<i>s.</i> <i>d.</i>		<i>s.</i> <i>d.</i>		<i>s.</i> <i>d.</i>
13	0 6½	28	0 9½	42	1 3½
14	0 6½	29	0 10½	43	1 4½
15	0 6½	30	0 10½	44	1 5
16	0 6½	31	0 10½	45	1 5½
17	0 7	32	0 11½	46	1 6½
18	0 7½	33	0 11½	47	1 7½
19	0 7½	34	1 0	48	1 8½
20	0 7½	35	1 0½	49	1 9½
21	0 8	36	1 0½	50	1 10½
22	0 8½	37	1 1½	51	1 11½
23	0 8½	38	1 1½	52	2 0½
24	0 8½	39	1 2½	53	2 2
25	0 9	40	1 2½	54	2 3½
26	0 9½	41	1 3½	55	2 5½
27	0 9½				

The contributions to be paid for the assurance of any sum less than 20*l.* are to bear such a proportion to the contributions above-mentioned, as the lesser sum assured may bear to 20*l.*: so that the contributions for the assurance of a sum of 10*l.* will uniformly be one-half of the above-mentioned contributions, and the contributions for the assurance of 5*l.* will, in like manner, be one-fourth part of the above contributions.

\* See remark at the foot of Table No. 1.

TABLE No. 4.\*

A Table of Single Payments to be made by Persons of the under-mentioned Ages next Birth-day, in lieu of a Monthly Contribution of 1*l.* from those Ages up to the several Ages under-mentioned.

Age next Birth-day.	Single Payment in lieu of a Monthly Contribution of 1 <i>l.</i> if payable.											
	Up to Age 55.			Up to Age 60.			Up to Age 65.			Up to Age 70.		
	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
13	222	2	8	228	1	4	232	3	3	234	16	9
14	219	11	7	225	15	6	230	1	0	232	16	10
15	216	19	6	223	8	10	227	18	2	230	16	5
16	214	6	5	221	1	5	225	14	8	228	15	6
17	211	12	1	218	13	2	223	10	7	226	14	2
18	208	16	6	216	4	0	221	5	9	224	12	2
19	205	19	8	213	13	9	219	0	2	222	9	7
20	203	1	4	211	2	6	216	13	9	220	6	4
21	200	1	7	208	10	2	214	6	5	218	2	4
22	197	0	3	205	16	7	211	18	3	215	17	8
23	193	17	3	203	1	9	209	9	1	213	12	2
24	190	12	6	200	5	7	206	18	11	211	5	11
25	187	5	9	197	8	1	204	7	8	208	18	9
26	183	17	3	194	9	1	201	15	3	206	10	8
27	180	6	7	191	8	7	199	1	9	204	1	8
28	176	13	11	188	6	6	196	7	0	201	11	10
29	172	18	11	185	2	10	193	11	2	199	1	0
30	169	1	8	181	17	6	190	14	1	196	9	3
31	165	2	0	178	10	5	187	15	8	193	16	7
32	160	19	10	175	1	7	184	16	0	191	2	11
33	156	14	10	171	10	9	181	15	0	188	8	3
34	152	7	1	167	18	0	178	12	7	185	12	7
35	147	16	4	164	3	2	175	8	8	182	15	11
36	143	2	5	160	6	2	172	3	4	179	18	2
37	138	5	2	156	6	10	168	16	5	176	19	4
38	133	4	4	152	5	1	165	7	10	173	19	5
39	127	19	7	148	0	9	161	17	6	170	18	2
40	122	10	10	143	13	7	158	5	4	167	15	9
41	116	17	7	139	3	5	154	11	1	164	11	11
42	110	19	7	134	10	1	150	14	9	161	6	8
43	104	16	5	129	13	3	146	16	1	157	19	10
44	98	7	9	124	12	8	142	14	11	154	11	4
45	91	13	1	119	8	1	138	11	1	151	1	1
46	84	11	5	113	19	0	134	4	3	147	8	9
47	77	3	7	108	5	3	129	14	3	143	14	3
48	69	7	7	102	6	3	125	0	8	139	17	4
49	61	3	4	96	1	8	120	3	7	135	18	1
50	52	10	3	89	11	3	115	2	8	131	16	5
51	.....			82	14	9	109	17	11	127	12	6
52	.....			75	11	4	104	9	0	123	6	0
53	.....			68	0	7	98	15	6	118	16	11
54	.....			60	1	7	92	17	1	114	4	10
55	.....			51	13	8	85	13	2	109	9	9

The single payments in lieu of any monthly contribution less than 1*l.* are to bear such a proportion to the above-mentioned payments as the lesser monthly contribution may bear to 1*l.*: so that the single payments in lieu of a monthly contribution of 10*s.* will uniformly be one half of the above-mentioned payments, and the single payments in lieu of a monthly contribution of 5*s.* will, in like manner, be one-fourth part of the above payments.

\* See remark at the foot of Table No. 1.

# APPENDIX.

ANNO DECIMO

GEORGH IV. REGIS.

CAP. LVI.

An Act to consolidate and amend the Laws relating to Friendly Societies.

[19th June, 1829.]

WHEREAS it is expedient to amend the laws relating to Friendly Societies, and to consolidate the same in one act, and to make other provisions respecting Friendly Societies; be it therefore enacted by the King's most excellent Majesty, by and with the advice and consent of the lords spiritual and temporal, and commons, in this present parliament assembled, and by the authority of the same, that an act passed in the thirty-third year of his late Majesty's reign, intituled "*An Act for the Encouragement and Relief of Friendly Societies*;" and also so much of <sup>33 Geo. III. c. 54.</sup> an Act passed in the thirty-fifth year of his said late Majesty's reign, intituled "*An Act for the more effectually carrying into execution an Act made in the thirty-third year of the reign of his present Majesty, intituled 'An Act for the Encouragement and Relief of Friendly Societies,' and for extending so much of the powers thereof as relates to the framing Rules and Regulations for the better Management of the Funds of such Societies, and the appointment of Treasurers, to other Institutions of a charitable nature, as relates to Friendly Societies*;" and also an Act passed in the parliament of Ireland in the thirty-sixth year of his said late Majesty's reign, intituled "*An Act for the Encouragement and Relief of Friendly Societies*;" and also an act passed in the <sup>36 Geo. III. (L)</sup> forty-third year of his said late Majesty's reign, intituled "*An Act for enabling Friendly Societies, intended to be established under an Act passed in the thirty-third year of the reign of his present Majesty, to rectify Mistakes made in the Registry of their Rules*;" and also an act <sup>43 Geo. III. c. 111.</sup> passed in the forty-ninth year of his said late Majesty's reign, to explain <sup>49 Geo. III. c. 58.</sup> and render more effectual the said recited act made in the parliament of Ireland in the thirty-sixth year of his said late Majesty's reign; and also an act passed in the forty-ninth year of his said late Majesty's reign, intituled "*An Act to amend an Act made in the thirty-third year of his present Majesty, for the Encouragement and Relief of Friendly Societies*;" and also an act passed in the fifty-ninth year of his said late <sup>49 Geo. III. c. 125.</sup>

59 Geo. III. c. 128. Majesty's reign, intituled "*An Act for the further Protection and Encouragement of Friendly Societies, and for preventing Frauds and Abuses therein*;" and also so much of an act passed in the sixth year

6 Geo. IV. c. 74. In part repealed except as hereinafter stated. of the reign of his present Majesty, intituled "*An Act for consolidating and amending the Laws relating to Conveyances and Transfers of Estates and Funds vested in Trustees who are Infants, Idiots, Lunatics, or Trustees of unsound Mind, or who cannot be compelled or refuse to act, and the Laws relating to Stocks and Securities belonging to Infants, Idiots, Lunatics, and Persons of unsound Mind*," as relates to Friendly Societies, for the better security, or for the application, receipt, payment, or transfer of any of the funds thereof; shall be and the same are hereby repealed, except so far as any of the said acts repeal the whole or any part of any other acts, and except as hereinafter is excepted: provided nevertheless, that such repeal shall not invalidate or affect any thing which has been done before the passing of this act in pursuance of any of the said acts.

Any number of persons may form themselves into a society, and raise a fund for their mutual benefit, and make rules, &c.

2. And whereas certain Friendly Societies have been established in *Great Britain and Ireland*, for raising, by voluntary subscription of the members thereof, separate funds for the mutual relief and maintenance of the said members in sickness, old age, and infirmity; and it is expedient to give protection to such Societies and the funds thereby established, and to afford encouragement to other persons to form the like societies; be it enacted, that it shall and may be lawful to and for any number of persons in *Great Britain and Ireland* to form themselves into and to establish a society for the purpose of raising from time to time, by subscriptions of the several members of every such society, or by voluntary contributions, or by donations, a stock or fund for the mutual relief and maintenance of all and every the members thereof, their wives or children, or other relations, in sickness, infancy, advanced age, widowhood, or any other natural state or contingency whereof the occurrence is susceptible of calculation by way of average;\* and to and for the several members of each society from time to time to assemble together, and to make, ordain, and constitute such proper and wholesome rules for the better government and guidance of the same as to the major part of the members of such society so assembled together shall seem meet, so as such rules shall not be repugnant to the laws of this realm, nor any of the express provisions or regulations of this act; and to impose and inflict such reasonable fines and forfeitures upon the several members of any such society who shall offend against such rules as shall be just and necessary for duly enforcing the same, to be respectively paid to such uses, for the benefit of such society, as such society by such rules shall direct; and also from time to time to alter and amend such rules as occasion shall require, or to annul and repeal the same, and to make new rules in lieu thereof, under such restrictions as are in this act contained.

Power to alter and amend rules.

Societies, in their rules, to declare the

3. And be it further enacted, that every such society so to be established as aforesaid, before any of the rules thereof shall be confirmed by

\* The purposes contemplated in the formation of Friendly Societies are extended by the Act of 4 & 5 Will. IV. c. 40, s. 2.

the justices in the manner hereinafter directed, shall, in or by one or more of the rules to be confirmed by such justices, declare all and every the intents and purposes for which such society is intended to be established, and shall also in and by such rules direct all and every the uses and purposes to which the money which shall from time to time be subscribed, paid, or given to or for the use or benefit of such society, or which shall arise therefrom, or in anywise shall belong to such society, shall be appropriated and applied, and in what shares and proportions and under what circumstances any member of such society, or other person, shall or may become entitled to the same or any part thereof; provided that the application thereof shall not in anywise be repugnant to the uses, intents, and purposes of such society, or any of them, so to be declared as aforesaid; and all such rules, during the continuance of the same, shall be complied with and enforced; and the monies so subscribed, paid, or given, or so arising, to or for the use or benefit of such society, or belonging thereto, shall not be diverted or misapplied either by the treasurer, trustee, or any other officer or member of such society entrusted therewith, under such penalty or forfeiture as such society shall by any rule impose and inflict for such offence.

purpose of  
their esta-  
blishment,  
&c.

4. And be it further enacted, that a transcript, fairly written on paper or parchment, of all such rules, signed by three members, and countersigned by the clerk or secretary, with all convenient speed after the same shall be made, altered, or amended, and so from time to time after every making, altering, or amending thereof, shall be submitted, in *England*, and *Wales* and *Berwick-upon-Tweed*, to the barrister at law for the time being appointed to certify the rules of Saving Banks,\* and in *Scotland* to the Lord Advocate or any of his deputies, and in *Ireland* to such barrister as may be appointed by his Majesty's Attorney-General in *Ireland*, for the purpose of ascertaining whether the said rules of such society, or alteration or amendment thereof, are in conformity to law and to the provisions of this act; and that the said barrister or advocate shall give a certificate thereof, or point out in what part or parts they are repugnant thereto; and that the fee payable to such barrister or advocate for perusing the rules, or alterations or amendments of the rules, of each respective society, and giving such certificate as aforesaid, shall not at any one time exceed the sum of one guinea, which, together with the expense of conveying the rules to and from the said barrister or advocate, shall be defrayed by each society respectively; and such transcript, when certified by the said barrister or advocate, shall be deposited with the clerk of the peace for the county wherein such society shall be formed, and by him laid before the justices for such county at the general quarter sessions, or adjournment thereof, next after the time when such transcript shall have been so certified and returned as aforesaid; and the justices then and there present are hereby authorized and required to allow and confirm the same; and such transcript shall be filed by such clerk of the peace with the rolls of the sessions of the peace in his custody; and a certificate of the enrol-

Rules of the  
society to be  
submitted to  
a barrister,  
or other per-  
son, by whom  
they are to  
be certified;

and depo-  
sited with  
the clerk of  
the peace.

Rules, when  
certified, to  
be confirmed  
by justices at  
sessions, and  
a duplicate

\* John Todd Pratt, Esq., No. 4, Elm-court, Temple, London, is the barrister appointed for this purpose.

certified by clerk of the peace.

When not necessary to submit rules to barrister.

Manner of proceeding in case barrister shall refuse to certify.

Rules not to be allowed unless the justices are satisfied with the tables.

No society entitled to the benefit of this Act, unless their rules have been confirmed.

ment thereof shall, within fourteen days after the end of the said sessions or adjournment thereof, be signed by such clerk of the peace on a duplicate copy to be provided by and returned to such society, without fee or reward: provided always, that nothing herein contained shall be construed to require any rules, alterations or amendments thereof, to be submitted to such barrister or advocate, if the same, when deposited with the clerk of the peace, are accompanied with an affidavit of being a copy of any of the rules, alterations, or amendments of any other society which shall have been already enrolled under the provisions of this act in the same county.\*

5. Provided always, and be it further enacted, that in case any such barrister or advocate shall refuse to certify all or any of the rules so to be submitted for his perusal and examination, it shall then be lawful for any such society to submit the same to the court of quarter sessions, together with the reasons assigned by the said barrister or advocate, in writing, for any such rejection or disapproval of any one or more such rules; and that the justices at their said quarter sessions shall and may, if they think fit, confirm and allow the same, notwithstanding any such rejection or disapproval by any such barrister or advocate.

6. Provided always, and be it further enacted, that no rules of any society hereafter to be formed shall be allowed, unless it shall appear to the justices to whom the same are tendered that the tables of the payment to be made by the members, and of the benefits to be received by them, may be adopted with safety to all parties concerned.†

7. And be it further enacted, that no such society as aforesaid shall have the benefit of this act, unless all the rules for the management thereof shall be entered in a book to be kept by an officer of such society appointed for that purpose, and which book shall be open at all reasonable times for the inspection of the members of such society, and unless all such rules shall be fairly transcribed, and such transcript deposited with the clerk of the peace for the county wherein such society shall be established as aforesaid; but nevertheless nothing contained herein shall extend to prevent any alteration in or amendment of any such rules so entered and deposited and filed as aforesaid, or repealing or annulling the same, or any of them, in the whole or in part, or making any new rules for the management of such society, in such manner as by the rules of such society shall from time to time be provided; but such new rules, or such alterations in or amendments of former rules, or any order annulling or repealing any former rules in the whole or in part, shall not be in force until the same respectively shall be entered in such book as aforesaid, and certified, when necessary, by such barrister or advocate as aforesaid, and until a transcript thereof shall be deposited with such clerk of the peace as aforesaid, who shall file and certify the same as aforesaid; and that no such rule, or alteration in or amendment of any former rule, shall be binding or have

\* This section is repealed by the Act of 4 & 5 Will. IV. c. 40, s. 1.

† This section is repealed by the Act of 4 & 5 Will. IV. c. 40, s. 3, and s. 4 of the last-mentioned Act is substituted.



any force or effect until the same shall have been confirmed by such justices, and filed as aforesaid.\*

8. And be it further enacted, that all rules from time to time made and in force for the management of such society as aforesaid, and duly entered in such book as aforesaid, and confirmed by the justices as aforesaid, shall be binding on the several members and officers of such society, and the several contributors thereto, and their representatives, all of whom shall be deemed and taken to have full notice thereof by such entry and contribution as aforesaid; and the entry of such rules in such book as aforesaid, or the transcript thereof deposited with such clerk of the peace as aforesaid, or a true copy of such transcript, examined with the original and proved to be a true copy, shall be received as evidence of such rules respectively in all cases; and no certiorari, suspension, advocacy, reduction, or other legal process shall be brought or allowed to remove any such rules into any of his Majesty's courts of record; and every copy of any such transcript deposited with any clerk of the peace as aforesaid shall be made without fee or reward, except the actual expense of making such copy.

Rules, when entered and deposited, to be binding on members and depositors.

Copy of transcript to be received in evidence.

9. And be it further enacted, that no rule confirmed by the justices of the peace in manner aforesaid shall be altered, rescinded, or repealed, unless at a general meeting of the members of such society as aforesaid, convened by public notice, written or printed, signed by the secretary or president or other principal officer or clerk of such society, in pursuance of a requisition for that purpose by seven or more of the members of such society, which said requisition and notice shall be publicly read at the two usual meetings of such society to be held next before such general meeting for the purpose of such alteration or repeal, unless a committee of such members shall have been nominated for that purpose at a general meeting of the members of such society convened in manner aforesaid, in which case such committee shall have the like power to make such alterations or repeal, and unless such alterations or repeal shall be made with the concurrence and approbation of three-fourths of the members of such society then and there present, or by the like proportion of such committee as aforesaid, if any shall have been nominated for that purpose.

No confirmed rule to be altered but at a general meeting of the society, &c.

10. And be it further enacted, that the rules of every society formed under the authority of this act shall specify the place or places at which it is intended such society shall hold its meetings, and shall contain provisions with respect to the powers and duties of the members at large, and of such committees or officers as may be appointed for the management of the affairs of such society: provided always, that it shall and may be lawful for any such society to alter their place or places of meeting whenever they may consider it necessary, upon giving notice thereof in writing to the clerk of the peace for the county within which such society shall be held, the said notice to be given within seven days before or after such removal, and signed by the secretary or other principal officer, and also by three or more of the members of the said society; and provided that the place or places at which such society

Rules shall specify place of meeting and duties of officers.

Societies may alter place of meeting.

\* This section is, in part, repealed by the Act of 4 & 5 Will. IV. c. 40, s. 3.

intend to hold their meetings shall be situate within the county in which the rules of the said society are enrolled.

Society may  
appoint officers.

11. And be it further enacted, that every such society shall and may from time to time, at any of their usual meetings, or by their committee, if any such shall be appointed for that society, elect and appoint such person into the office of steward, president, warden, treasurer, or trustee of such society, as they shall think proper, and also shall and may from time to time elect and appoint such clerks and other officers as shall be deemed necessary to carry into execution the purposes of such society, for such space of time and for such purposes as shall be fixed and established by the rules of such society, and from time to time to elect and appoint others in the room of those who shall vacate or die; and such treasurer, trustee, and all and every other officer or other person whatever who shall be appointed to any office in anywise touching or concerning the receipt, management, or expenditure of any sum of money collected for the purpose of any such society, before he, she, or they shall be admitted to take upon him, her, or them the execution of any such office or trust, (if required so to do by the rules of such society to which such officer shall belong) shall become bound in a bond, according to the form prescribed in the schedule to this act annexed, with two sufficient sureties, for the just and faithful execution of such office or trust, and for rendering a just and true account according to the rules of such society, and in all matters lawful to pay obedience to the same, in such penal sum of money as by the major part of such society at any such meeting as aforesaid shall be thought expedient, and to the satisfaction of such society; and that every such bond to be given by or on the behalf of such treasurer or trustee, or of any other person appointed to any other office or trust, shall be given to the clerk of the peace of the county where such society shall be established, for the time being, without fee or reward; and in case of forfeiture it shall be lawful to sue upon such bond in the name of the clerk of the peace for the time being, for the use of the said society, fully indemnifying and saving harmless such clerk of the peace from all costs and charges in respect of such suit; provided that such bond shall have in Scotland the same force and effect as a bond in the form in use in Scotland containing a clause of registration.

Securities to  
be given for  
offices of  
trust, if re-  
quired.

Treasurer or  
trustees to  
give bond to  
the clerk of  
the peace.

Appointment  
of commit-  
tees.

12. And be it further enacted, that every such society shall and may from time to time elect and appoint any number of the members of such society to be a committee, the number thereof to be declared in the rules of every such society, and shall and may delegate to such committee all or any of the powers given by this act to be executed, who, being so delegated, shall continue to act as such committee, for and during such time as they shall be appointed, for such society, for general purposes, the powers of such committee being first declared in and by the rules of such society, confirmed by the justices of the peace at their sessions, and filed in the manner hereinbefore directed; and in all cases where a committee shall be appointed for any particular purpose, the powers delegated to such committee shall be reduced into writing and entered into a book by the secretary or clerk of such society, and a majority of the members of such committee shall at all times be neces-

Powers of  
standing  
committees  
to be de-  
clared in the  
rules of the  
society, and  
of particular  
ones entered  
in a book.

sary to concur in any act of such committee; and such committee shall in all things delegated to them act for and in the name of such society; and all acts and orders of such committee, under the powers delegated to them, shall have the like force and effect as the acts and orders of such society at any general meeting thereof could or might have had in pursuance of this act: provided always, that the transactions of such committee shall be entered in a book belonging to such society, and shall be from time to time and at all times subject and liable to the review, allowance, or disallowance and control of such society, in such manner and form as such society shall by their general rules, confirmed by the justices and filed as aforesaid, have directed and appointed, or shall in like manner direct and appoint.

Committee  
controllable  
by society.

13. And be it further enacted, that it shall and may be lawful to and for the treasurer or trustee for the time being of any such society, and he, she, and they is and are hereby authorized and required, from time to time, by and with the consent of such society, to be had and testified in such manner as shall be directed by the general rules of such society, to lay out or dispose of such part of all such sums of money as shall at any time be collected, given, or paid to and for the beneficial ends, intents, and purposes of such society, as the exigencies of such society shall not call for the immediate application or expenditure of, either on real or heritable securities or heritable property, to be approved of as aforesaid, (such securities to be taken in the name of such treasurer or trustee for the time being) or to invest the same in the public stocks or funds, savings banks, or government securities, or in any of the chartered banks in *Scotland*, or in the bank of the commercial banking company of *Scotland*, and not otherwise, in the proper name of such treasurer or trustee; and from time to time, with such consent as aforesaid, to alter and transfer such securities and funds, and to make sale thereof respectively; and that all the dividends, interests, and proceeds which shall from time to time arise from the monies so laid out or invested as aforesaid shall from time to time be brought to account by such treasurer or trustee, and shall be applied to and for the use of such society, according to the rules thereof.

Treasurer or  
trustees to  
lay out sur-  
plus of con-  
tributions;

and to bring  
the proceeds  
to account.

14. And be it further enacted, that every person who shall have or receive any part of the monies, effects, or funds of or belonging to any such society, or shall in any manner have been or shall be entrusted with the disposal, management, or custody thereof, or of any securities, books, papers, or property relating to the same, his or her executors, administrators, and assigns respectively, shall, upon demand made, or notice in writing given or left at the last or usual place of residence of such persons, in pursuance of any order of such society, or committee to be appointed as aforesaid, for that purpose, give in his or her account at the usual meeting of such society, or to such committee thereof as aforesaid, to be examined and allowed or disallowed by such society or committee thereof, and shall, on the like demand or notice, pay over all the monies remaining in his or her hands, and assign and transfer or deliver all securities and effects, books, papers, and property, taken or standing in his or her name as aforesaid, or being in his or her hands or custody, to the treasurer or trustee for the time being, or to such other

Treasurers,  
&c. to render  
accounts,  
and pay over  
balances, &c.

and in case of neglect, application may be made to the Court of Exchequer, &c.

person as such society or committee thereof shall appoint; and in case of any neglect or refusal to deliver such account, or to pay over such monies, or to assign, transfer, or deliver such securities and effects, books, papers, and property, in manner aforesaid, it shall and may be lawful to and for every such society, in the name of the treasurer or trustee or other principal officer thereof, as the case may be, to exhibit a petition in the Court of Exchequer in *England* or *Ireland*, or in the Court of Session in *Scotland*, or the Courts of Great Sessions in *Wales* respectively, who shall and may proceed thereupon in a summary way, and make such order therein, upon hearing all parties concerned, as to such court in their discretion shall seem just, which order shall be final and conclusive; and all assignments, sales, and transfers made in pursuance of such order shall be good and effectual in law to all intents and purposes whatsoever.

Where trustees, &c. are out of jurisdiction of the Court, or it be uncertain whether they are alive, or they refuse to convey, &c. Court of Exchequer may appoint a person to convey.

15. And be it further enacted, that when and so often as any person seised or possessed of any lands, tenements, or hereditaments, or other property, or any estate or interest therein, as a trustee of any such society, shall be out of the jurisdiction of or not amenable to the process of the Court of Exchequer in *England* or *Ireland*, or the Court of Session in *Scotland*, or of the Court of Great Sessions in *Wales*, or shall be idiot, lunatic, or of unsound mind, or it shall be unknown or uncertain whether he or she be living or dead, or such person shall refuse to convey or otherwise assure such lands, tenements, hereditaments, or property, or estate or interest, to the person duly nominated as trustee of such society in their stead, either alone or together with any continuing trustee, as occasion shall require, then and in every or any such case it shall be lawful for the judges of the said courts respectively to appoint such person, as to such court shall seem meet, on behalf and in the name of the person seised or possessed as aforesaid, to convey, surrender, release, assign, or otherwise assure the said lands, tenements, hereditaments, or property, or estate or interest, to such trustee so duly nominated as aforesaid; and every such conveyance, release, surrender, assignment, or assurance shall be as valid and effectual to all intents and purposes as if the person being out of the jurisdiction or not amenable to the process of the said courts, or not known to be alive, or having refused, or as if the person being idiot, lunatic, or of unsound mind, had been at the time of the execution thereof of sane mind, memory, and understanding, and had by himself or herself executed the same.

When trustees shall be absent, &c., courts may order stock to be transferred and dividends paid.

16. And be it further enacted, that when and as often as it shall happen that all and every person in whose name any part of the several stocks, annuities, and funds transferable or which hereafter shall be made transferable at the Bank of *England*, or in the books of the governor and company of the Bank of *England*, is, are, or shall be standing as a trustee of any such society, shall be absent, out of the jurisdiction or not amenable to the process of the said Court of Exchequer in *England* or *Ireland*, or the Court of Session in *Scotland*, or the Courts of Great Sessions in *Wales*, or shall be a bankrupt, insolvent, or lunatic, or it shall be uncertain or unknown whether such trustee is living or dead, that then and in such case it shall and may be lawful to

and for the judges of the said courts respectively to order and direct that the accountant-general, or the secretary or deputy-secretary, or other proper officer for the time being of the governor and company of the Bank of England, do transfer in the book of the said company such stock, annuities, or funds standing as aforesaid, to and into the name of such person as such society may appoint, and also pay over to such person as aforesaid the dividends of such stock, annuities, or funds; and when and as often as it shall happen that one or more only, and not all or both of such trustees as aforesaid, shall be so absent, or not amenable to such process as aforesaid, or a bankrupt, insolvent, or lunatic, or it be uncertain or unknown whether any one or more of such trustees is or are living or dead, that then, and in all and every such last-mentioned case and cases, it shall and may be lawful to and for the judges of the said courts respectively to order and direct that the other and others of such trustees who shall be forthcoming and ready and qualified to act do transfer such stock, annuities, or funds to and into the name of such person as aforesaid, and also that such forthcoming trustee do also receive and pay over the dividends of such stock, annuities, or funds, as such society shall direct; and that all such transfers and payments so made shall be and are hereby declared to be valid and effectual to all intents and purposes whatsoever, any former statute, law, usage, or custom to the contrary thereof in anywise notwithstanding.

17. And be it further enacted, that no fee, reward, emolument, or gratuity whatsoever shall be demanded, taken, or received by any officer or minister of such courts for any matter or thing done in such courts in pursuance of this act; and that upon the presenting of any such petition it shall be lawful for the judges of the said courts respectively to assign counsel learned in the law, and to appoint a clerk or practitioner of such court, to advise and carry on such petition on the behalf of such society, who are hereby respectively required to do their duties therein without fee or reward.

No fee to be taken for any proceeding in such courts, &c.

18. Provided always, and be it further enacted, that in all cases in which orders shall be made by any of the courts aforesaid for the transfer of stocks or funds transferable at the Bank of England, the persons to be named in such orders respectively for making such transfers shall be the secretary, deputy-secretary, or accountant-general of the governor and company of the Bank of England for the time being, or one of them, except in cases where one or more of the trustees in whose name such stocks or funds shall stand shall be ordered to transfer the same without the concurrence of any other or others of such trustees; any thing herein contained to the contrary thereof in anywise notwithstanding.

Who shall be named in the orders of the court for making transfers.

19. And be it further enacted, that this act shall be and is hereby declared to be a full and complete indemnity and discharge to the governor and company of the Bank of England, and their officers and servants, for all acts and things done or permitted to be done pursuant thereto, and that such acts and things shall not be questioned or impeached in any court of law or equity to their prejudice or detriment.

Act to be an indemnity to the Bank.

20. And be it further enacted, that if any person appointed to any

Sec. to pay money due to societies before any other debts.

office by any such society, and being entrusted with or having in his or her hands or possession, by virtue of his or her said office, any monies or effects belonging to such society, or any deeds or securities, relating to the same, shall die, or become a bankrupt or insolvent, his or her executors or administrators or assignees, or other persons having legal right, shall, within forty days after demand made by the order of any such society or committee thereof, or the major part of them assembled at any meeting thereof, deliver over all things belonging to such society to such person as such society shall appoint, and shall pay, out of the estates, assets, or effects of such person all sums of money remaining due which such person received by virtue of his or her said office, before any of his or her other debts are paid or satisfied; and all such assets, estates, and effects shall be bound to the payment and discharge thereof accordingly.\*

Effects of societies to be vested in the trustees or treasurers for the time being, who may bring and defend actions, &c.

21. And be it further enacted, that all real and heritable property, monies, goods, chattels, and effects whatever, and all titles, securities for money, or other obligatory instruments and evidences or muniments, and all other effects whatever, and all rights or claims belonging to or had by such society, shall be vested in the treasurer or trustee of such society for the time being, for the use and benefit of such society and the respective members thereof, their respective executors or administrators, according to their respective claims and interests; and after the death or removal of any treasurer or trustee shall vest in the succeeding treasurer or trustee, for the same estate and interest as the former treasurer or trustee had therein, and subject to the same trusts, without any assignment or conveyance whatever, except the transfer of stocks and securities in the public funds of *Great Britain and Ireland*; and also shall, for all purposes of action or suit, as well criminal as civil, in law or in equity, in anywise touching or concerning the same, be deemed and taken to be, and shall in every such proceeding (where necessary) be stated to be, the property of the person appointed to the office of treasurer or trustee of such society for the time being, in his or her proper name, without further description; and such person shall and he or she is hereby respectively authorized to bring or defend, or cause to be brought or defended, any action, suit, or prosecution, criminal as well as civil, in law or in equity, touching or concerning the property, right, or claim aforesaid of or belonging to or had by such society; provided such person shall have been thereunto duly authorized by the consent of the majority of members present at any meeting of the society or committee thereof; and such person so appointed shall and may, in all cases concerning the property, right, or claim aforesaid of such society, sue and be sued, plead and be impleaded, in his or her proper name, as treasurer or trustee of such society, without other description; and no such suit, action, or prosecution shall be discontinued or abate by the death of such person, or his or her removal from the office of treasurer or trustee, but the same shall and may be proceeded in by the succeeding treasurer or trustee in the proper name of the person commencing the same, any law, usage, or custom to the contrary notwithstanding;

\* This section is repealed by the Act of 4 & 5 Will. IV. c. 40, s. 1, and s. 12 of the last-mentioned Act is substituted.

and such succeeding treasurer or trustee shall pay or receive like costs as if the action or suit had been commenced in his or her name, for the benefit of or to be reimbursed from the funds of such society.

22. And be it further enacted, that the treasurer or trustee, or any other officer of any society established under the authority of this act, shall not be liable to make good any deficiency which may arise in the funds of such society, unless such persons shall have respectively declared by writing under their hands, deposited and registered in like manner with the rules of such society, that they are willing so to be answerable; and it shall be lawful for each of such persons, or for such persons collectively, to limit his, her, or their responsibility to such sum as shall be specified in any such instrument or writing: provided always, that the said treasurer, trustee, and every other the officer of any such society, shall be and they are hereby declared to be personally responsible and liable for all monies actually received by him, her, or them on account of or to and for the use of the said society.

*Limitation of responsibility of treasurers or trustees.*

*Treasurer, &c. liable for money actually received*

23. And be it further enacted, that whenever the trustees of any society established under this Act, at any time after the decease of any member, have paid and divided any sum of money to or amongst any person or persons who shall at the time of such payment appear to such trustees to be entitled to the effects of any deceased intestate member, the payment of any such sum or sums of money shall be valid and effectual with respect to any demand of any other person or persons as next of kin of such deceased intestate member, or as the lawful representative or representatives of such member, against the funds of such society, or against the trustees thereof; but nevertheless such next of kin for representatives shall have remedy for such money so paid as aforesaid against the person or persons who shall have received the same.

*Payment to persons appearing to be next of kin declared valid.*

24. And be it further enacted, that in case any member of any society shall die, who shall be entitled to any sum not exceeding 20*l.*, it shall be lawful for the trustees or treasurer of such society, and they are hereby authorized and permitted, if such trustees or treasurer shall be satisfied that no will was made and left by such deceased member, and that no letters of administration or confirmation will be taken out of the funds, goods, and chattels of such depositor, to pay the same at any time after the decease of such member according to the rules and regulations of the said institution, and in the event of there being no rules and regulations made in that behalf, then the said trustees or treasurer are hereby authorized and permitted to pay and divide the same to and amongst the person or persons entitled to the effects of the deceased intestate, and that without administration in *England or Ireland*, and without confirmation in *Scotland*.

*For payment of sums not exceeding 20*l.* where members die intestate.*

25. And be it further enacted, that for the more effectually preventing fraud and imposition on the funds of such societies, if any officer, member, or any other person being or representing himself or herself to be a member of such society, or the nominee, executor, administrator, or assignee of any member of such society, or any other person whatever, shall, in or by any false representation or imposition fraudulently obtain possession of the monies of such society, or any part thereof, or, having in his or her possession any sum of money belonging to such society,

*Justices may hear cases of fraud, and punish by fine or imprisonment.*

shall fraudulently withhold the same, and for which offence no especial provision is made in the rules of such society, it shall be lawful for any one justice of the peace residing within the county within which such society shall be held, upon complaint made on oath or affirmation by an officer of such society appointed for that purpose, to summon such person against whom such complaint shall be made to appear at a time and place to be named in such summons; and upon his or her appearance, or, in default thereof, upon due proof, upon oath or affirmation, of the service of such summons, it shall and may be lawful for any two justices residing within the county aforesaid to hear and determine the said complaint according to the rules of the said society, confirmed as directed by this act; and, upon due proof of such fraud, the said justices shall convict the said party, and award double the amount of the money so fraudulently obtained or withheld to be paid to the treasurer, to be applied by him to the purposes of the society so proved to have been imposed upon and defrauded, together with such costs as shall be awarded by the said justices, not exceeding the sum of 10s.; and in case such person against whom such complaint shall be made shall not pay the sum of money so awarded to the person and at the time specified in the said order, such justices are hereby required, by warrant under their hands and seals, to cause the same to be levied by distress and sale of the goods of such person on whom such order shall have been made, or by other legal proceeding, together with such costs as shall be awarded by the said justices, not exceeding the sum of 10s., and also the costs and charges attending such distress and sale or other legal proceeding, returning the overplus (if any) to the owner; and, in default of such distress being found, the said justices of the peace shall commit such person so proved to have offended to the common gaol or house of correction, there to be kept to hard labour for such a period, not exceeding three calendar months, as to them shall seem fit: provided nevertheless, that nothing herein contained shall prevent the said society from proceeding by indictment or complaint against the party complained of; and provided also, that no party shall be proceeded against by indictment or complaint, if a previous conviction has been obtained for the same offence under the provisions of this act.

Proceedings  
necessary for  
the dissolution  
of any  
society.

26. And be it further enacted, that it shall not be lawful for any such society, by any rule at any general meeting, or otherwise, to dissolve or determine such society, so long as the intents or purposes declared by such society, or any of them, remain to be carried into effect, without obtaining the votes of consent of five-sixths in value of the then existing members of such society, to be ascertained in manner hereinafter mentioned, and also the consent of all persons then receiving or then entitled to receive relief from such society, either on account of sickness, age, or infirmity, to be testified under their hands individually and respectively; and for the purpose of ascertaining the votes of such five-sixths in value, every member shall be entitled to one vote, and an additional vote for every five years that he may have been a member; provided also, that no one member shall have more than five votes in the whole; and in all cases of dissolution, the intended appropriation or division of the funds or other property of such society shall be fairly and



distinctly stated in the proposed plan of dissolution, prior to such consent being given; nor shall it be lawful for such society by any rule to direct the division or distribution of such stock or fund, or any part thereof, to or amongst the several members of such society, other than for carrying into effect the general intents and purposes of such society, declared by them, and confirmed by the justices of the peace as aforesaid, according to the directions of this act; but that all such rules for the dissolution or determination of any such society, without such consent as aforesaid, or for the distribution or division of the stock or fund of such society, contrary to the rules which shall have been confirmed by the said justices at their sessions, and filed in pursuance of this act, shall be void and of none effect; and in the event of such division or misappropriation of the funds of such society, without the consent hereby declared to be requisite, the trustee or other officer or person aiding or abetting therein shall be liable to the like penalties as are hereinbefore provided for in cases of fraud.

*Stock not divisible but for general purposes of the society.*

*Penalties for illegal dissolution or division of funds.*

27. Provided always, and be it further enacted, that provision shall be made by one or more of the rules of every such society, to be confirmed as required by this act, specifying whether a reference of every matter in dispute between any such society, or any person acting under them, and any individual member thereof, or person claiming on account of any member, shall be made to such of his Majesty's justices of the peace as may act in and for the county in which such society may be formed, or to arbitrators to be appointed in manner hereinafter directed; and if the matter so in dispute shall be referred to arbitration, certain arbitrators shall be named and elected at the first meeting of such society, or general committee thereof, that shall be held after the enrolment of its rules, none of the said arbitrators being beneficially interested, directly or indirectly, in the funds of the said society, of whom a certain number, not less than three, shall be chosen by ballot in each such case of dispute, the number of the said arbitrators and mode of ballot being determined by the rules of each society respectively, the names of such arbitrators shall be duly entered in the book of the said society in which the rules are entered as aforesaid; and in case of the death, or refusal or neglect of any or all of the said arbitrators to act, it shall and may be lawful to and for the said society, or general committee thereof, and they are hereby required, at their next meeting, to name and elect one or more arbitrator or arbitrators as aforesaid to act in the place of the said arbitrator or arbitrators so dying, or refusing or neglecting to act as aforesaid; and whatever award shall be made by the said arbitrators, or the majority of them, according to the true purport and meaning of the rules of such society, confirmed by the justices according to the directions of this act, shall be in the form to this act annexed, and shall be binding and conclusive on all parties, and shall be final, to all intents and purposes, without appeal, or being subject to the control of one or more justices of the peace, and shall not be removed or removable into any court of law, or restrained or restrainable by the injunction of any court of equity; and should either of the said parties in dispute refuse or neglect to comply with or conform to the decision of the said arbitrators, or the major part of them, it shall and may be lawful for any one justice of the

*Rules to be made directing how disputes shall be settled.*

*Appointment of arbitrators.*

*Justices shall enforce compliance with the decision of arbitrators.*

peace residing within the county within which such society shall be held, upon good and sufficient proof being adduced before him of such award having been made, and of the refusal of the party to comply therewith, upon complaint made by or on behalf of the party aggrieved, to summon the person against whom such complaint shall be made to appear at a time and place to be named in such summons; and upon his or her appearance, or in default thereof, upon due proof, upon oath, of the service of such summons, any two justices of the peace may proceed to make such order thereupon as to them may seem just; and if the sum of money so awarded, together with a sum for costs not exceeding the sum of ten shillings, as to such justices shall seem meet, shall not be immediately paid, then such justices shall, by warrant under their hands and seals, cause such sum and costs as aforesaid to be levied by distress or by distress and sale of the monies, goods, chattels, securities, and effects belonging to the said party or to the said society, or other legal proceeding, together with all further costs and charges attending such distress and sale or other legal proceeding, returning the overplus (if any) to the said party, or to the said society, or to one of the treasurers or trustees thereof; and in default of such distress being found, or such other legal proceeding being ineffectual, then to be levied by distress and sale of the proper goods of the said party, or of the officer of the said society, so neglecting or refusing as aforesaid, by other legal proceedings, together with such further costs and charges as aforesaid, returning the overplus (if any) to the owner: provided always, that whatever sums shall be paid by any such officer, so levied on his or her property or goods in pursuance of the award of arbitrators or order of any justices, shall be repaid, with all damages accruing to him or her, by and out of the monies belonging to such society, or out of the first monies which shall be thereafter received by such society.

Reference of disputes to justices, if so directed by the rules of the society.

28. And be it further enacted, that if by the rules of any such society it is directed that any matter in dispute as aforesaid shall be decided by justices of the peace, it shall and may be lawful for any such justice, on complaint being made to him of any refusal or neglect to comply with the rules of such society by any member or officer thereof, to summon the person against whom such complaint shall be made to appear at a time and place to be named in such summons; and upon his or her appearance, or in default thereof, upon due proof, on oath or affirmation, of the service of such summons, it shall and may be lawful for any two justices to proceed to hear and determine the said complaint according to the rules of the said society; and in case the said justices shall adjudge any sum of money to be paid by such person against whom such complaint shall be made, and such person shall not pay such sum of money to the person and at the time specified by such justices, they shall proceed to enforce their award in the manner hereinbefore directed to be used in case of any neglect to comply with the decision of the arbitrators appointed under the authority of this act.

Orders of justices to be final.

29. And be it further enacted, that every sentence, order, and adjudication of any justices under this act shall be final and conclusive to all intents and purposes, and shall not be subject to appeal, and shall not be removed or removable into any court of law, or restrained or restrain-

able by the injunction of any court of equity, and that no suspension, advocacy, or reduction shall be competent.

30. And be it further enacted, that it shall be lawful for any society established under the authority of this act from time to time to subscribe the whole or any part of the funds of such society into the funds of any institution which shall have taken the benefit of an act passed in the last session of parliament, intituled "*An Act to consolidate and amend the Laws relating to Savings Banks*," subject to the provisions in the said last-recited act contained relating to Friendly Societies.\*

Funds may be subscribed into Savings' Bank;

9 Geo. IV. c. 92.

31. And be it further enacted, that it shall be lawful for any society established under authority of this act to pay directly into the Bank of England any sum of money not being less than 50*l.* to the account of the commissioners for the reduction of the national debt, upon the declaration of the treasurers or trustees of such society, or any two or more of them, that such monies belong exclusively to the society for which such payment is intended to be made; and the cashier or cashiers of the Bank of England are hereby required to receive all such monies, and to place the same to the account raised in the names of the said commissioners for the time being in the books of the Bank of England denominated "*The Fund for the Friendly Societies*;" and in case any such declaration shall not be true, then and in every such case the sum so paid shall be forfeited to the said Commissioners; and all the clauses and provisions of an act passed in the ninth year of his present Majesty's reign, intituled "*An Act to consolidate and amend the Laws relating to Savings Banks*," with respect to the accounts of banks for savings, and the regulation of receipts, certificates, or order concerning the same, shall be applicable to the monies so paid into the Bank of England under the authority of this act, as if the same had been repeated herein: provided nevertheless, that every society formed and enrolled previous to the 28th day of July, 1828, under the provisions of an act made and passed in the said 59th year of his late Majesty's reign, intituled "*An Act for the further Protection and Encouragement of Friendly Societies, and for preventing Frauds and Abuses therein*," shall, on paying money directly into the Bank of England as aforesaid, be entitled to receive receipts bearing interest at the rate of three-pence per centum per diem, anything in this act contained to the contrary thereof notwithstanding:† provided also, that no Friendly Society which already has invested or may hereafter invest any money with the said commissioners shall be entitled to re-deposit any sum or sums of money with them, without the consent of the said commissioners, or on their behalf by the comptroller-general or assistant comptroller-general under the said commissioners.‡

or into the Bank of England, on receipts.

Societies enrolled under 59 Geo. III. c. 128, prior to 28 July, 1828, entitled to 3*d.* per cent. per diem.

\* This section is repealed by the Act of 4 and 5 Will. IV. c. 40. s. 1., and s. 9. of the last-mentioned Act is substituted.

† By the Act of 9 Geo. IV. c. 92. s. 16, the rate of interest allowed to Savings Banks was reduced from 3*d.* per cent. per diem, to 2½*d.* per cent. per diem; and the latter is therefore the rate allowed to Friendly Societies not formed and enrolled previous to the 28th of July 1828.

‡ Instructions to enable the trustees of Friendly Societies to open an account with the Commissioners for the Reduction of the National Debt, per Act 10 Geo. IV. c. 56. s. 31.

A printed

Minors may be members and have legal authority to act.

32. And be it further enacted, that a minor may become a member of any such society, and shall be empowered to execute all instruments, give all necessary acquittances, and enjoy all the privileges and be liable to all the responsibilities appertaining to members of matured age, notwithstanding his or her incapacity or disability in law to act for himself or herself: provided always, that such minor be admitted into such society by and with the consent of his or her parents, masters, or guardians.

Societies shall make annual audits and statements of the funds to the members.

33. And be it further enacted, That the rules of every such society shall provide that the treasurers, trustees, stewards, or other principal officer thereof shall, once in every year at least, prepare or cause to be prepared a general statement of the funds and effects of or belonging to such society, specifying in whose custody or possession the said funds or effects shall be then remaining, together with an account of all and every the various sums of money received and expended by or on account of the said society since the publication of the preceding periodical statement; and every such periodical statement shall be attested by two or more members of such society appointed auditors for that purpose, and shall be countersigned by the secretary or clerk of such society; and every member shall be entitled to receive from the said society a copy of such periodical statement, on payment of such sum as the rules of such society may require, not exceeding the sum of sixpence.

Returns to be made to the clerks of the peace at certain periods.

34. And whereas it is desirable, for the better security of such societies, that correct calculations of tables of payment and allowances, dependent on the duration of sickness and the probabilities of human life, may be constructed for their assistance: And whereas the present existing data on these subjects have been found imperfect and inefficient; be it therefore further enacted, That every such society established or to be established under the authority of this act shall, within three months after the expiration of the month of *December*, 1835, and so again within three months after the expiration of every further period of five years, transmit [to the clerk of the peace for the county wherein such society is held]\* a return of the rate of sickness and mortality experienced by the said society within the beforementioned period of five years, according to the form prescribed in the schedule appended to this Act, a copy whereof shall be annexed to the rules of each society respectively.

A printed (or manuscript) copy of the rules of the Society is to be produced at the National Debt Office, and two of the trustees are to certify, under their hands, that such copy is a true and literal transcript of the original rules, and that the said original rules have been confirmed and enrolled according to law.

The trustees are also to state whether their rules were at any time enrolled under the provisions of the Act 59 Geo. III. c. 123, and if they were, then a certificate to that effect is to be produced under the hands of the Clerk of the Peace, stating the date thereof.

No Friendly Society can open an account with the Commissioners until the above shall have been complied with.

National Debt Office, 27th Nov. 1832.

\* The words between the brackets are repealed by the Act of 4 & 5 Will. IV. c. 40, s. 1, and section 6 of the last-mentioned Act substituted.

35. And be it further enacted, That the said clerks of the peace shall, within one month after the expiration of the month of *March*, 1836, and so again within one month after the expiration of every further period of five years, transmit to one of his Majesty's principal secretaries of state a list of the societies which have been enrolled during such period under this Act, specifying their names, the places where they have been established, and date of enrolment, and time of ceasing to exist, if such case should arise, [and also a copy of the returns of sickness and mortality hereinbefore directed to be made to them according to the schedule (A.)];\* a copy of which list, with the schedule attached to it, shall be laid before both houses of parliament within one month then next ensuing, if parliament shall be sitting, or within one month after the time when parliament shall next sit.

Returns to be transmitted to Secretary of State, and laid before Parliament.

36. And be it further enacted, That should any such society refuse or neglect to transmit or cause to be transmitted the aforesaid returns of sickness and mortality in the manner and within the time hereinbefore directed, the clerk of the peace within each county shall give immediate notice to such society, that unless the said return is made within twenty-one days from the date of such notice, the said society will, and thereupon shall, cease to be entitled to the privileges of this Act, unless good and sufficient cause be shown to the justices at their then next ensuing general or quarter sessions why such returns could not be made.†

Penalty on societies not making returns.

37. And be it further enacted, That no copy of rules, power, warrant, or letter of attorney granted or to be granted by any persons as trustee of any society established under this Act, for the transfer of any share in the public funds standing in the name of such trustee, nor any receipts given for any dividend in any public stock or fund or interest of exchequer bills, nor any receipt, nor any entry in any book of receipt, for money deposited in the funds of any such society, nor for any money received by any member, his or her executors or administrators, assigns or attorneys, from the funds of such society, nor any bond nor other security to be given to or on account of any such society, or by the treasurer or trustee or any officer thereof, nor any draft or order, nor any form of assurance, nor any appointment of any agent, nor any certificate or other instrument for the revocation of any such appointment, nor any other instrument or document whatever required or authorized to be given, issued, signed, made, or produced in pursuance of this Act, shall be subject or liable to or charged with any stamp duty or duties whatsoever.

Exemption from stamp duties.

38. And be it further enacted, That the word "Society" in this Act shall be understood to include Friendly Society or Societies, institution or institutions; the word "Rules" to include rules, orders, and regulations; the word "County" to include county, riding, division, or place; and the words "Treasurer or Trustee" to include treasurers or trustees; and the word "Person" to include persons; and the word "Book" to include books; and the word "Bond" to include bonds;

Construction of Act.

\* The words between these brackets are also repealed by the Act of 4 & 5 Will IV. c. 40, s. 1.

† This section is repealed by the last-mentioned Act, s. 1.

"Name" to include names; "Account" to include accounts; "Member" to include members and honorary members; "Clerk of the Peace" to include town clerk; unless it be otherwise specially provided.

Act to extend  
to all present  
and future  
societies.

39. And be it further enacted, That this Act shall extend to all Friendly Societies hereafter to be established, and also to societies already established, as soon as they shall think fit to conform to the provisions thereof.

Societies al-  
ready en-  
rolled to con-  
form to this  
Act within  
three years.

40. And be it further enacted, That provided societies already enrolled shall not conform to the provisions of this Act within the space of three years from the passing of this Act, the said societies shall then cease to be entitled to the privileges and provisions of any or either of the herein-before repealed Acts: Provided nevertheless, that the provisions of the herein-before repealed Acts shall continue in force as to all societies established under any or either of them before the passing of this Act for the said space of three years, or until they shall sooner conform to the provisions of this Act.

Public Act.

41. And be it further enacted, That this Act shall be deemed a Public Act, and shall extend to *Great Britain and Ireland and Berwick-upon-Tweed*, and be judicially taken notice of as such by all Judges, Justices, and other persons whatsoever, without the same being specially shown or pleaded.

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## 10 GEORGII IV. Cap. 56.

## FORM OF AWARD.

We, the major part of the Arbitrators duly appointed by the  
 Society established at \_\_\_\_\_ in the  
 county of \_\_\_\_\_ do hereby award and order, that *A. B.*  
 [*specifying by name the party or the officer of the Society*] do, on the  
 day of \_\_\_\_\_, pay to *C. D.*  
 the sum of \_\_\_\_\_ or we do hereby reinstate  
 in or expel *A. B.* from the said Society [*as the case may be*]. Dated  
 this \_\_\_\_\_ day of \_\_\_\_\_ One thousand  
 eight hundred and \_\_\_\_\_

*E. F.**G. H.*

## FORM OF BOND.

Know all men by these presents, that we, *A. B.* of  
 treasurer [*or trustee, &c.*] of the \_\_\_\_\_ Society  
 established at \_\_\_\_\_ in the county of \_\_\_\_\_  
 and *C. D.* of \_\_\_\_\_ and *G. H.* of \_\_\_\_\_  
 (as sureties on behalf of the said *A. B.*), are jointly and severally held  
 and firmly bound to *E. F.*, the present Clerk of the Peace [*or Town*  
 Clerk] for the county [*or county of a city, or county of a town, riding,*  
*division, or place, as the case may be,*] of \_\_\_\_\_  
 in the sum of \_\_\_\_\_ to be paid to the said *E. F.* as  
 such Clerk of the Peace, [*or Town Clerk*] or his successor, Clerk of the  
 Peace [*or Town Clerk*] of the said county [*or county of a city, &c.*]  
 for the time being, or his certain attorney; for which payment, well and  
 truly to be made, we jointly and severally bind ourselves, and each of  
 us by himself, our and each of our heirs, executors, and administrators,  
 firmly by these presents, sealed with our seals. Dated the \_\_\_\_\_  
 day of \_\_\_\_\_ in the \_\_\_\_\_ Year of  
 our Lord \_\_\_\_\_

Whereas the above-bounden *A. B.* hath been duly appointed trea-  
 surer [*or trustee, &c.*] of the \_\_\_\_\_ Society established



as aforesaid, and he, together with the above-bounden *C. D.* and *G. H.* as his sureties, have entered into the above written bond, subject to the condition hereinafter contained; now, therefore, the condition of the above-written bond is such, that if the said *A. B.* shall and do justly and faithfully execute his office of treasurer [or trustee] of the said society established as aforesaid, and shall and do render a just and true account of all monies received and paid by him, and shall and do pay over all the monies remaining in his hands, and assign and transfer or deliver all securities and effects, books, papers, and property of or belonging to the said society in his hands or custody to such person or persons as the said society shall appoint, according to the rules of the said society, together with the proper or legal receipts or vouchers for such payments, and likewise shall and do in all respects well and truly and faithfully perform and fulfil his office of treasurer [or trustee, &c.] to the said society, according to the rules thereof, then the above-written bond shall be void and of no effect, otherwise shall be and remain in full force and virtue.

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ANNO SECUNDO  
GULIELMI IV. REGIS.

CAP. XXXVII.

An Act to amend an Act of the tenth year of his late Majesty King George the Fourth, by extending the time within which pre-existing Societies must conform to the provisions of that Act.

[23rd May, 1832.]

10 Geo. IV. c. 56.

WHEREAS by an Act made in the tenth year of the reign of his late Majesty King George the Fourth, intituled "*An Act to consolidate and amend the laws relating to Friendly Societies*," it was enacted, that, provided societies then already enrolled should not conform to the provisions of that Act within the space of three years from the passing of such Act, the said societies should then cease to be entitled to the privileges and provisions of any or either of certain Acts thereby repealed; but that the provisions of the said Acts thereby repealed should continue in force, as to all Societies established under any or either of them, before the passing of the Act now in recital, for the said space of three years, or until they should sooner conform to the provisions of that Act: and whereas the said space or term of three years from the passing of the said recited Act will expire on the nineteenth day of *June* now next ensuing, and which will be in the current year of our Lord one thousand eight hundred and thirty-two: and whereas many Friendly Societies existing and enrolled before the passing of the said recited Act have not yet conformed to the provisions therein contained, and it is expedient to extend the space or term of three years granted by the said Act to such societies, so to conform thereto; be it therefore enacted by the King's most excellent Majesty, and by and with the advice and consent of the Lords spiritual and temporal, and Commons, in this present parliament assembled, and by the authority of the same, that the term or space of three years granted or allowed by the said recited Act to Friendly Societies enrolled before the passing of the said Act, for conforming to the provisions of the said Act, shall be extended until *Michaelmas* day which will be in the year of our Lord one thousand eight hundred and thirty-four, but that provided societies enrolled before the passing of the said Act shall not conform to the provisions of the said Act on or before *Michaelmas* day in the said year of our Lord one thousand eight hundred and thirty-four, then the said societies shall then cease to be entitled to the privileges and provisions of any or either of the Acts repealed by the said recited Act: provided nevertheless, that the provisions of the several Acts repealed by the said recited Act shall continue in force as to all societies established under any or either of them before the passing of the said recited Act until *Michaelmas* day in the said

Term extended for pre-existing societies to conform to provisions of recited Act.

Pre-existing societies to conform before Michaelmas, 1834.

year of our Lord one thousand eight hundred and thirty-four, or until they shall sooner conform to the provisions of the said Act; anything in the said Act to the contrary contained in anywise notwithstanding.

II. And whereas under and by virtue of an Act passed in the Parliament of Ireland in the thirty-sixth year of the reign of his Majesty King George the Third, intituled "*An Act for the encouragement and relief of Friendly Societies*," certain societies were established, for the purpose of relieving, by voluntary subscriptions and benefactions, the widows, orphans, and families of the clergy, both of the established church and dissenters, and others in distressed circumstances; and whereas it is doubtful whether the said recited Act of the tenth year of his late Majesty extends to such societies; for remedy whereof, it is hereby further declared and enacted, That the said recited Act of the tenth year of the reign of his late Majesty doth and shall extend to all such societies established or to be established for the purpose aforesaid under authority of the said recited Act of the Parliament of Ireland, as soon as such societies shall think fit to conform to the provisions of the said recited Act of the tenth year of his late Majesty: provided nevertheless, that such societies shall so conform within the term or space herein-before limited and appointed for societies to conform to the provisions of the said last recited Act of the Tenth year of his late Majesty, and not otherwise.

Recited Act 10 Geo. IV. c. 56, to extend to societies established under 56 Geo. III. (1.) if such societies conform to the provisions thereof within the time limited.

III. And be it further enacted, That this Act shall be deemed a Public Act, and shall extend to *Great Britain and Ireland and Berwick-upon-Tweed*, and be judicially taken notice of as such by all judges, justices, and other persons whatsoever, without the same being specially shown or pleaded.

Public Act.

ANNO QUARTO ET QUINTO

GULIELMI IV. REGIS.

CAP. XL.

An Act to amend an Act of the tenth year of his late Majesty King George the Fourth, to consolidate and amend the Laws relating to Friendly Societies.

[30th July, 1834.]

WHEREAS it is expedient to alter and amend an Act made in the tenth year of the reign of his late Majesty King George the Fourth, intituled  
50 Geo. IV. c. 16. *"An Act to consolidate and amend the laws relating to Friendly Societies ;"* be it therefore enacted by the King's most excellent Majesty, by and with the advice and consent of the Lords spiritual and temporal, and Commons, in this present parliament assembled, and by the authority of the same, that so much of the said Act as enacts that no rules shall be allowed unless it shall appear to the justices to whom the same are tendered that the tables of the payment to be made by the members, and of the benefits to be received by them, may be adopted with safety to all parties concerned; and so much as enacts that the executors, administrators, or assignees, of bankrupts or insolvents shall pay money due to Friendly Societies, before any other debts; and so much as enacts that the funds of any Friendly Society may be subscribed into a savings bank; and so much as requires the returns of the rate of sickness and mortality to be made to the clerk of the peace, or as requires clerks of the peace to transmit such returns to the Secretary of State, or as provides that the Friendly Society refusing or neglecting to make such return, should cease to be entitled to the privileges of the said recited Act; shall be, and the same are hereby repealed.

Purposes for which societies may be formed under 10 Geo. IV. c. 56. II. And whereas it is in and by the said recited Act provided, that a society may be established for the mutual relief and maintenance of all and every the members thereof, their wives or children, or other relations, in sickness, infancy, advanced age, widowhood or any other natural state or contingency whereof the occurrence is susceptible of calculation by way of average: and whereas it is expedient to extend the object or purpose for which the society may be established under the provisions of the said recited Act; be it therefore enacted, That it shall and may be lawful for any number of persons in *Great Britain and Ireland* to form themselves into, and to establish a society, under the provisions of the said recited Act, for the mutual relief and maintenance of all and every the members thereof, their wives, children, relations, or nominees, in sickness, infancy, advanced age, widowhood, or any other natural state or contingency whereof the occurrence is sus-

ceptible of calculation by way of average, or for any other purpose which is not illegal; provided always, that when the rules of any society provide for relief in any other case than that of sickness, infancy, advanced age, widowhood, or other natural state or contingency as aforesaid, the contributions for such other purpose, shall be kept separate and distinct, or the charges defrayed by extra subscriptions of the members at the time such contingencies take place.

III. And be it further enacted, That so much of the said recited Act as relates to the rules of Friendly Societies being transmitted to the barrister or advocate, and deposited with the clerk of the peace and certified by him, as well as so much as relates to alterations of rules being certified by the clerk of the peace, and that no rule or alteration or amendment should be binding until confirmed by the justices, and filed under the recited Act, shall be, and the same are hereby repealed.

Repeal of 10 Geo. IV. c. 56, s. 4. and part of s. 7.

IV. And be it further enacted, That two transcripts, fairly written on paper or parchment, of all rules made in pursuance of the said recited Act or this Act, signed by three members, and countersigned by the clerk or secretary (accompanied, in the case of an alteration or amendment of the rules, with an affidavit of the clerk or secretary, or one of the officers of the said society, that the provisions of the said recited Act, or of the Act under which the rules of the society may have been enrolled, have been duly complied with,) with all convenient speed, after the same shall be made, altered, or amended, and so from time to time, after every making, altering, or amending thereof, shall be submitted, in *England and Wales*, and *Berwick-upon-Tweed*, to the barrister at law for the time being appointed to certify the rules of saving banks, and in *Scotland* to the Lord Advocate, or any depnte appointed by him for that purpose, and in *Ireland* to such barrister as may be appointed by his Majesty's Attorney-General in *Ireland*, for the purpose of ascertaining whether the said rules of such society, or alteration or amendment thereof, are calculated to carry into effect the intention of the parties framing such rules, alterations, or amendments, and are in conformity to law, and to the provisions of the said recited Act or this Act; and that the said barrister or advocate shall advise with the said clerk or secretary, if required, and shall give a certificate on each of the said transcripts, that the same are in conformity to law, and to the provisions of the said recited Act and this Act, or point out in what part or parts the said rules are repugnant thereto; and that the barrister or advocate, for advising as aforesaid, and perusing the rules, or alterations or amendments of the rules, of each respective society, and giving such certificates as aforesaid, shall demand no further fee than that specified in the said recited Act; and one of such transcripts, when certified by the said barrister or advocate, shall be returned to the society, and the other of such transcripts shall be transmitted by such barrister or advocate to the clerk of the peace for the county wherein such society shall be formed, and by him laid before the justices for such county at the General Quarter Sessions, or adjournment thereof, held next after the time when such transcript shall have been so certified and transmitted to him, as aforesaid; and the justices then and there present are hereby authorized and required, without motion, to allow and confirm the same; and

Two Transcripts of rules to be submitted to a barrister, &c. by whom they are to be certified.

Barrister, &c. to certify both transcripts.

Fee payable to barrister.

One transcript to be returned to society, the other to be sent to clerk of pence.

Justices to confirm rules.

Transcript to be filed.

Rules, &c. to be binding when certified by barrister.

Barrister not to be entitled to fee in respect of alterations within three years, nor for certificate to rules being copies of those already enrolled

Returns of sickness, &c. to be sent to barrister.

If rules of society direct reference in case of dispute to arbitration, and society refuse to grant arbitrators, &c. justices may determine the dispute.

Provision in case member of society is expelled.

such transcript shall be filed by such clerk of the peace with the rolls of the sessions of the peace in his custody, without fee or reward; and that all rules, alterations and amendments thereof, from the time when the same shall be certified by the said barrister or advocate, shall be binding on the several members and officers of the said society, and all other persons having interest therein.

V. Provided always, and be it enacted, That the said barrister shall be entitled to no further fee for or in respect of any alteration or amendment of any rules upon which one fee has been already paid to the said barrister, within the period of three years; provided also, that if any rules, alterations, or amendments are sent to such barrister or advocate, accompanied with an affidavit of being a copy of any rules, or alterations or amendments of the rules, of any other society, which shall have been already enrolled under the provisions of the said recited Act or this Act, the said barrister or advocate shall certify and return the same as aforesaid, without being entitled to any fee for such certificate.

VI. And be it further enacted, That the returns of the rate of sickness and mortality, according to the form prescribed in the schedule appended to the said recited Act, shall be transmitted at the periods therein mentioned to the barrister or advocate, by whom the rules of the society may have been certified, and shall by such barrister or advocate be transmitted to the Secretary of State, for the purposes in the said recited Act provided.

VII. And whereas in and by the said recited Act provision is directed to be made by the rules of every society, whether reference of any matter in dispute shall be made to justices or to arbitrators: and whereas it is expedient that further provision should be made in case the reference is to arbitrators; be it therefore enacted, That when the rules of any society provide for a reference to arbitrators of any matter in dispute, and it shall appear to any justice of the peace, on the complaint on oath of a member of any such society, or of any person claiming on account of such member, that application has been made to such society, or the steward or other officer thereof, for the purpose of having any dispute so settled by arbitration, and that such application has not within forty days been complied with, or that the arbitrators have neglected or refused to make any award, it shall and may be lawful for such justice to summon the trustee, treasurer, steward, or other officer of the society, or any one of them against whom the complaint is made, and for any two justices to hear and determine the matter in dispute, in the same manner as if the rules of the said society had directed that any matter in dispute as aforesaid should be decided by justices of the peace, any thing in the said recited Act contained to the contrary notwithstanding.

VIII. And be it further enacted, That in case any member of a Friendly Society established under the said recited Act or this Act shall have been expelled from such society, and the arbitrators or justices, as the case may be, shall award or order that he or she shall be reinstated, it shall and may be lawful for such arbitrators or justices to award or order, in default of such reinstatement, to the member so expelled, such a sum of money as to such arbitrators or justices may seem

just and reasonable; which said sum of money, if not paid, shall be recoverable from the said society, or the treasurer, trustee, or other officer, in the same way as any money awarded by arbitrators is recoverable under the said recited Act.

IX. And be it further enacted, That it shall be lawful for any society established under the authority of the said recited Act, or this Act, from time to time to subscribe the whole or any part of the funds of such society into the funds of any institution which shall have taken the benefit of an Act passed in the ninth year of the reign of his late Majesty King George the Fourth, intituled "*An Act to consolidate and amend the laws relating to Savings Banks*," subject to the provisions in that Act contained relating to Friendly Societies, except so much thereof as restricts the amount allowed to be invested, which restriction as to the amount allowed to be invested by any Friendly Society is hereby repealed: provided always, that it shall not be necessary for the trustees of any savings bank to enrol at the sessions any alteration in the rules of such institution which may be occasioned by the provision herein contained.\*

Funds of Friendly Society may be deposited in savings' bank.

9 Geo. IV. c. 92.

X. And be it further enacted, That on the trial of any action, indictment, or other proceeding respecting the property of any society enrolled under the authority of the said recited Act or this Act, or in any proceedings before any justice of the peace, any member of such society shall be a competent witness, and shall not be objected to on account of any interests he may have as such member, in the result of such action, indictment, or other proceeding.

Members of Friendly Societies may be witnesses

XI. And be it further enacted, That no fee shall be charged to any member of any Friendly Society whatever for any oath or oaths which he may be legally required to make before a magistrate or magistrates, in order to obtain the payment of his sick pay or allowance; any law, usage, rule or custom to the contrary notwithstanding.

No fee for oaths before magistrates, in obtaining payment of sick pay.

XII. And be it further enacted, That if any person already appointed, or who may hereafter be appointed to any office in a society established under the said recited Act or this Act, and being entrusted with the keeping of the accounts, or having in his hands or possession, by virtue

Executors, &c. of officers of Friendly Society to pay money due to society before any other debts.

\* Extract from the Savings Bank Act of 9 Geo. IV. c. 92. s. 28. :—"And be it further enacted, that it shall be lawful, if the trustees or managers of any savings banks shall think proper, for any Friendly Society established under and by virtue of any Act or Acts relating to Friendly Societies from time to time to subscribe the whole or any part of the funds of such Friendly Society, as they shall from time to time direct, through their treasurer, steward, or other officer or officers, into the funds of any institution which shall take the benefit of this Act, and which shall be willing to receive the same, under such terms and conditions as shall be specially provided for that purpose by the rules, orders, and regulations of such institution: provided always, that it shall not be lawful for the said trustees to receive any sum or sums from any Friendly Society formed and enrolled after the passing of this Act which may exceed the sum of three hundred pounds, principal and interest included, nor to pay any interest on the same whenever such sum or sums shall amount to or continue at the said sum of three hundred pounds or upwards."

The last-mentioned proviso is repealed by the section of the above-mentioned Act to which this note refers, so that there is now no restriction as to the amount which a Friendly Society may choose to deposit in a savings bank.

of his said office or employment, any monies or effects belonging to such society, or any deeds or securities relating to the same, shall die, or become a bankrupt or insolvent, or have any execution or attachment, or other process issued, or action or diligence raised against his lands, goods, chattels, or effects, or property or estate, heritable or moveable, or make any assignment, disposition, assignation, or other conveyance thereof for the benefit of his creditors, his heirs, executors, administrators, or assignees, or other persons having legal right, or the sheriff or other officer executing such process, or the party using such action or diligence, shall within forty days after demand made in writing, by the order of any such society or committee thereof, or the major part of them assembled at any meeting thereof, deliver and pay over all monies and other things belonging to such society, to such person as such society or committee shall appoint, and shall pay, out of the estates, assets, or effects, heritable or moveable, of such person, all sums of money remaining due, which such person received by virtue of his said office or employment, before any other of his debts are paid or satisfied, or before the money directed to be levied by such process as aforesaid, or which may be recovered or recoverable under such diligence, is paid over to the party issuing such process or using such diligence; and all such assets, lands, goods, chattels, property, estates, and effects shall be bound to the payment and discharge thereof accordingly.

Letters to and from barristers and advocates to be free of postage.

XIII. And be it further enacted, That the barristers and advocate appointed under the provisions of the said recited Act, passed in the tenth year of the reign of his late Majesty King George the Fourth, shall and may receive and send by the General Post, from and to places within the United Kingdom, all letters and packets relating solely and exclusively to the execution of the said recited Act or this Act, free from the duty of postage, provided that such letters and packets as shall be sent to either of the said barristers or advocate be directed to the "barrister, or advocate, appointed to certify the rules of Friendly Societies," at his office in *London, Edinburgh, or Dublin*, as the case may be, and that all such letters and packets as shall be sent by either of the said barristers or advocate shall be in covers, with the words, "barrister or advocate appointed to certify rules of Friendly Societies pursuant to Act of Parliament passed in the tenth year of the reign of his late Majesty King George the Fourth," printed on the same, and be signed on the outside thereof under such words with the name of such barrister or advocate in his own handwriting, (such name to be from time to time transmitted to the secretaries of the General Post Office in *London, Edinburgh, and Dublin*;) and under such other regulations and restrictions as the Lords Commissioners of the Treasury, or any three or more of them, shall think proper and direct; and the said barrister or advocate is hereby strictly forbidden so to subscribe any letter or packet whatever except such as he shall himself know to relate solely and exclusively to the execution of the said last-mentioned recited Act or this Act; and if such barrister or advocate shall send, or cause or permit to be sent, under any such cover, any letter, paper, or writing, or any inclosure, other than what shall relate to the execution of the said last-mentioned recited Act or this Act, the barrister or, advocate so offending shall for



feit and pay the sum of one hundred pounds, and be dismissed from his office; one moiety of the said penalty to the use of his Majesty, his heirs and successors, and the other moiety to the use of the person who shall inform or sue for the same, to be sued for and recovered in any of his Majesty's Courts of Record at *Westminster* for offences committed in *England*, and in any of his Majesty's Courts of Record in *Dublin* for offences committed in *Ireland*, and before the Sheriff or Stewartry Court of the shire or stewartry within which the party offending shall reside, or the offence shall be committed, for offences committed in *Scotland*; and if any letter, paper, or writing, or other inclosure, shall be sent under cover to either of the said barristers or advocate, the same not relating solely and exclusively to the execution of the said last-mentioned recited Act or this Act, he is hereby strictly required and enjoined to transmit the same forthwith to the secretary of the post office, in *London*, *Edinburgh*, or *Dublin*, as the case may be, with the covers under which the same shall be sent, in order that the contents thereof may be charged with the full rates of postage.

XIV. And whereas in and by the said recited Act it was enacted, that provided societies then already enrolled should not conform to the provisions of that Act within the space of three years from the passing of such Act, the said societies should then cease to be entitled to the privileges and provisions of any or either of certain Acts thereby repealed, but that the provisions of the said Acts thereby repealed should continue in force as to all societies established under any or either of them before the passing of the said recited Act for the said space of three years, or until they should sooner conform to the provisions of that Act: and whereas by a certain Act made and passed in the second year of the reign of his present Majesty the said space of three years was extended until *Michaelmas day* one thousand eight hundred and thirty-four: and whereas many Friendly Societies existing and enrolled before the passing of the said recited Act have not yet conformed to the provisions therein contained; and it is expedient further to extend the time for enrolment under the recited Act; be it therefore enacted, That the provisions of the several Acts repealed by the said recited Act shall continue in force as to all societies established under any or either of them before the passing of the said recited Act until they shall conform to the provisions of the said recited Act, as altered and amended by this Act, anything in the said recited Act, or in the said Act passed in the second year of his present Majesty, to the contrary contained in anywise notwithstanding: provided always, that when a society already enrolled under any or either of the Acts repealed by the said recited Act shall be desirous of making any alteration in, amendment of, or addition to, the rules thereof, the said alteration, amendment, or addition shall be made in conformity with the said recited Act as amended by this Act, and such society shall thenceforth be subject to all the provisions and entitled to all the benefits and privileges in the said recited Act and this act contained.

XV. And be it further enacted, That wherever in the said recited Act or this Act, in describing or referring to any person, the word importing the singular number or the masculine gender only is used, the

Provisions of former statutes to continue in force as to societies established under them until they shall conform to the provisions of 10 Geo. IV. c. 36. as hereby amended.

If a society enrolled under Acts repealed by 10 Geo. IV. c. 36. be desirous of altering their rules, the same to be done in conformity to that Act.

Construction of words in the Act.

same shall be understood to include and shall be applied to several persons or parties as well as one person or party, and females as well as males, unless there be something in the subject or context repugnant to such construction.

Act may be  
amended.  
Public Act.

XVI. And be it further enacted, That this Act may be altered, amended, or repealed during the present session of parliament.

XVII. And be it further enacted, That this Act shall be deemed a Public Act, and shall extend to *Great Britain and Ireland and Berwick-upon-Tweed*, and be judicially taken notice of as such by all judges, justices, and other persons whatsoever, without the same being specially shown or pleaded.



THE END.







